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Utilizing both the experience gained from the Machine-Readable Cataloging (MARC) Pilot Project, which tested the feasibility of distributing Library of Congress cataloging in machine readable form to various users, and the results of extensive consultation with the library community and persons at the Library of Congress, a format for communication of bibliographic data, MARC II, has been devised. It is designed to have sufficient flexibility to serve as the standardized communications format for a wide variety of bibliographic data. The basic format has the following parts: (1) a leader which identifies and describes the record, its length and its effect on the file, (2) a directory which is essentially an index to the location of the variable fields within the record, (3) a control number which is the unique number assigned to the record, (4) variable fixed fields, which are the fixed fields which would appear in a given type of record, but which vary in number and length among the different types of records, and (5) variable fields which may not be present in all records of a given types. The use of the format is shown in the cataloging of monographs, demonstrating how each of the elements on a catalog card would be transcribed into MARC II format. Also included in this report is "The MARC II Format, Supplement One", including additional changes designed to make the format more flexible and to simplify the structure. (CM)

ED0 24413

LI 001118

MARC II

ERIC/CLIS
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LIBRARY OF CONGRESS

LI 001118

VARIABLE FIXED FIELD CONTENTS TABLE

(Tag 001)--The indicator will not be used with this field

Element Number	Name of Fixed Length Data Element	Number of Characters	Character Position in Field
1.	Number of Entries in Record Directory (p. 51)	3	1-3
2.	Date Entered on File (p. 51)	6	4-9
3.	Type of Publication Date Code (p. 52)	1	10
4.	Date 1 (p. 52)	4	11-14
5.	Date 2 (p. 52)	4	15-18
6.	Country of Publication Code (p. 56)	3	19-21
7.	Illustration Codes (p. 56)	4	22-25
8.	Intellectual Level Code (p. 58)	1	26
9.	Form of Reproduction Code (p. 59)	1	27
10.	Form of Content Codes (p. 59)	4	28-31
11.	Government Publication Indicator (p. 60)	1	32
12.	Conference or Meeting Indicator (p. 61)	1	33
13.	Festschrift Indicator (p. 61)	1	34
14.	Index Indicator (p. 61)	1	35
15.	Main Entry in Body of Entry Indicator (p. 61)	1	36
16.	Fiction Indicator (p. 62)	1	37
17.	Biography Indicator (p. 62)	1	38
18.	Language Code (p. 62)	3	39-41

SAMPLE LIBRARY OF CONGRESS CARD IN THE MARC II FORMAT

Leader						Record Directory			
00500	N	b̸	A	Mb̸b̸	2	000001600192	001004400208	030000600252	050001200258

100003200270	240004900302	260001200351	261001400363	262000900377	300002100386

500002800407	650001300435	655001400448	650001300462	655001500485	F̸

LC Card Number			Fixed Fields											
b̸b̸	b̸b̸b̸64008616b̸b̸	F̸	b̸b̸	015	101167	S1965b̸b̸b̸b̸	NYU	b̸b̸b̸b̸	b̸	b̸	b̸b̸b̸b̸	0001100	ENG	F̸

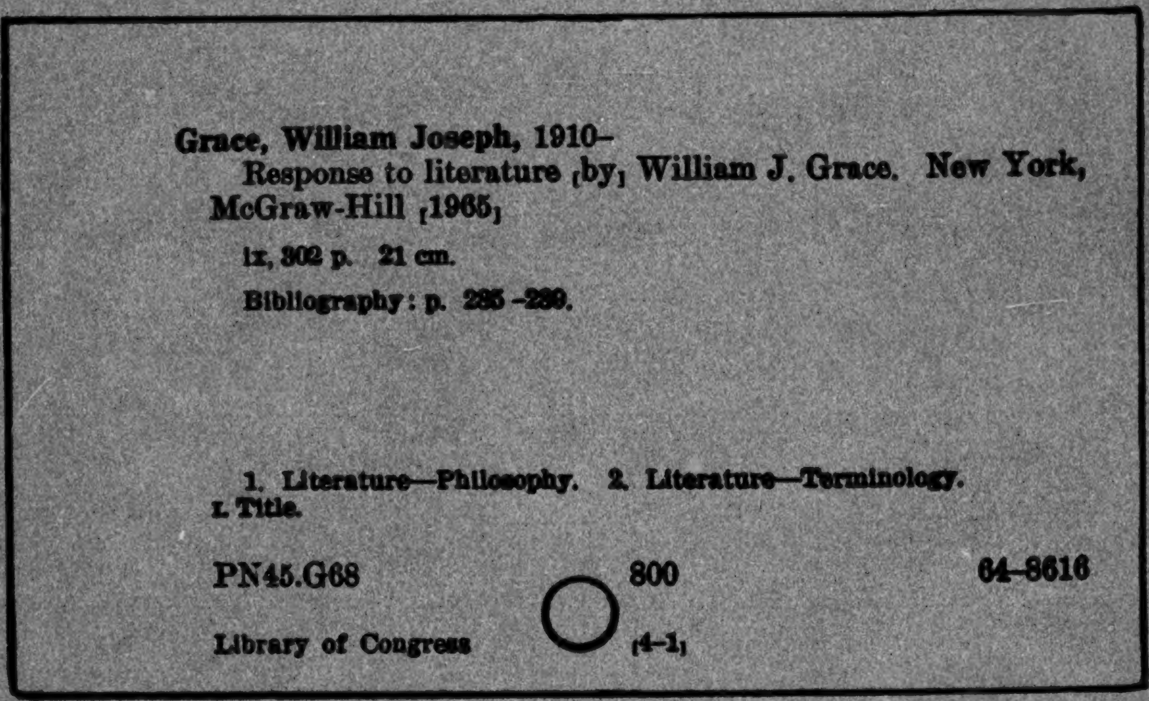
Class Numbers						Main Entry			Title	
b̸b̸	800	F̸	b̸b̸	PN45$.G68	F̸	1b̸	Grace,b̸Williamb̸Joseph,$$1910-	F̸	1b̸	Responseb̸tob̸

		Imprint					
literature$$[by]b̸Williamb̸J.b̸Grace.	F̸	b̸b̸	Newb̸York,	F̸	b̸b̸	McGraw-Hill	F̸

			Collation			Note		
b̸b̸	[1965]	F̸	b̸b̸	ix,b̸302b̸p.$$21b̸cm.	F̸	b̸b̸	Bibliography:b̸p.b̸285-289.	F̸

Subject Tracings											
b̸b̸	Literature	F̸	b̸b̸	Philosophy.	F̸	b̸b̸	Literature	F̸	b̸b̸	Terminology.	R̸

F̸ = Field Terminator R̸ = Record Terminator



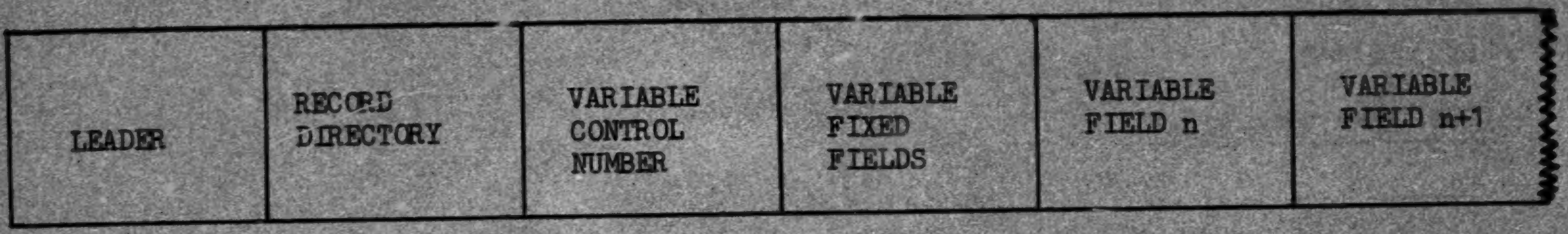
Grace, William Joseph, 1910–
Response to literature [by] William J. Grace. New York,
McGraw-Hill [1965]
ix, 302 p. 21 cm.
Bibliography: p. 285–289.

1. Literature—Philosophy. 2. Literature—Terminology.
I. Title.

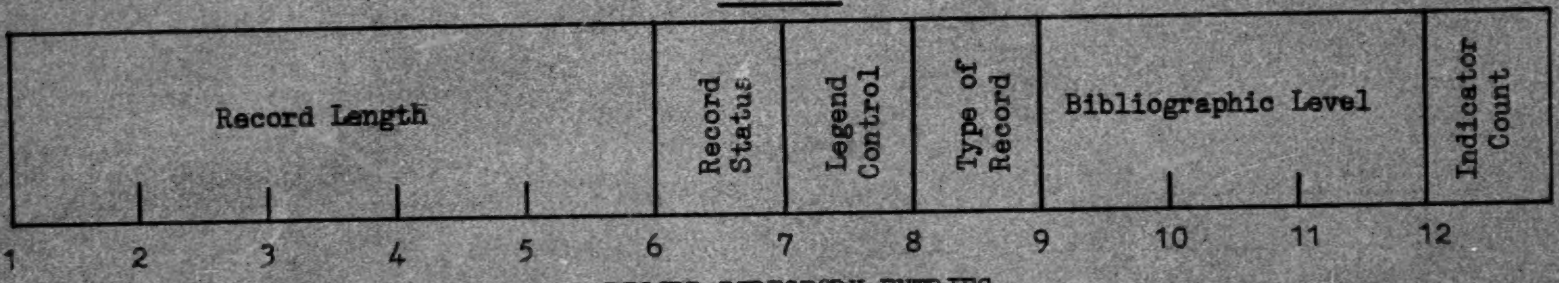
PN45.G68 800 64–8616

Library of Congress [4-1]

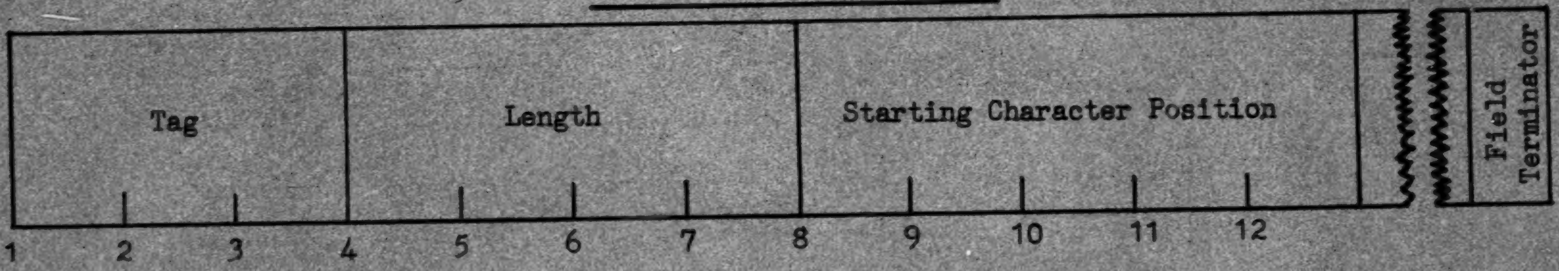
SUMMARY OUTLINE OF THE MARC II FORMAT


LEADER
RECORD DIRECTORY
VARIABLE CONTROL NUMBER
VARIABLE FIXED FIELDS
VARIABLE FIELD n
VARIABLE FIELD n+1

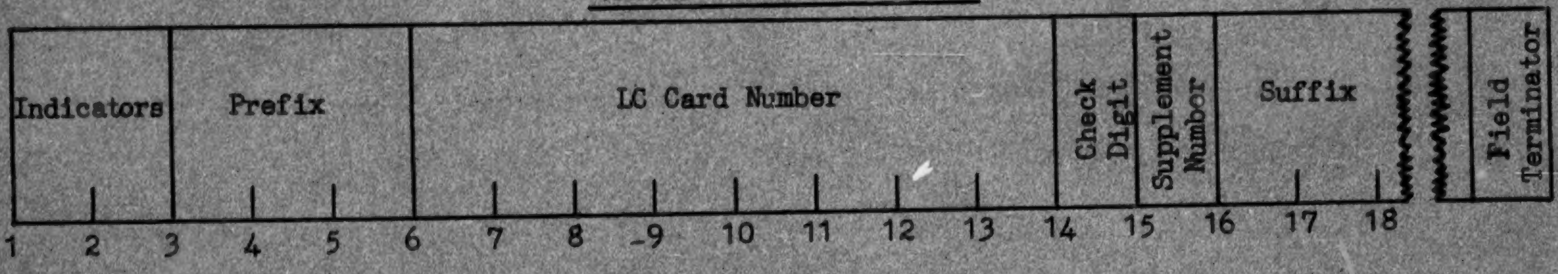
LEADER


Record Length
Record Status
Legend Control
Type of Record
Bibliographic Level
Indicator Count
1
2
3
4
5
6
7
8
9
10
11
12

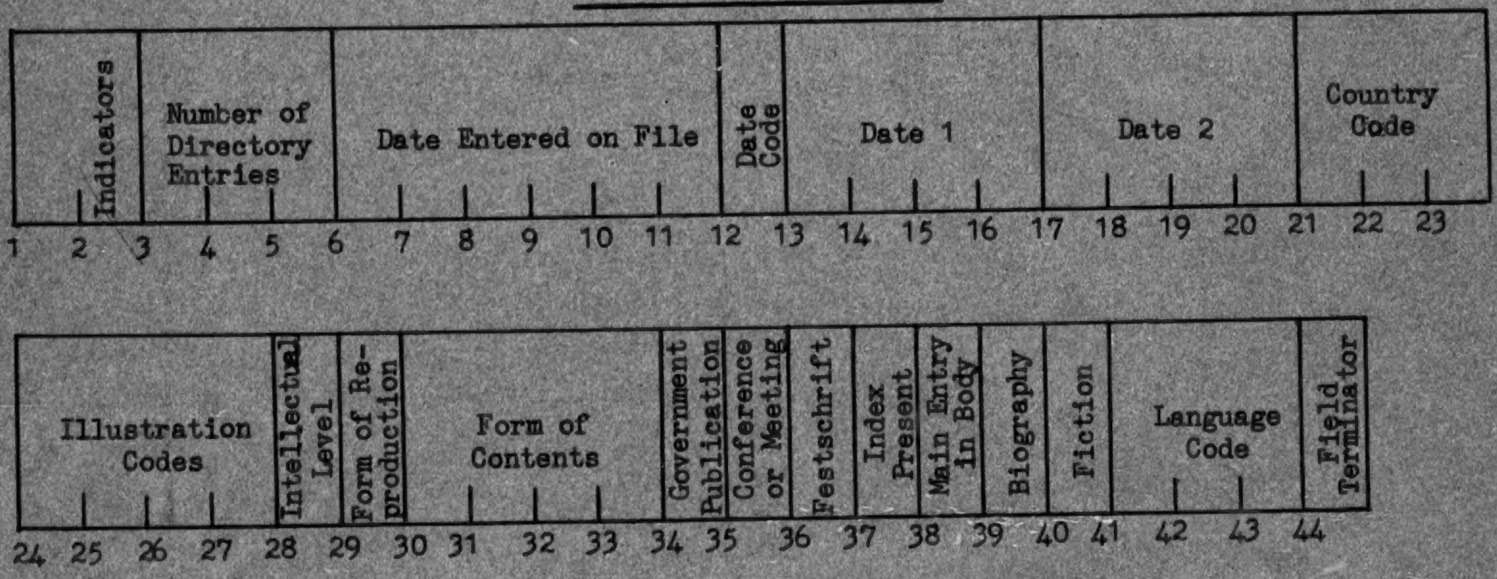
RECORD DIRECTORY ENTRIES


Tag
Length
Starting Character Position
Field Terminator
1
2
3
4
5
6
7
8
9
10
11
12

VARIABLE CONTROL NUMBER


Indicators
Prefix
LC Card Number
Check Digit
Supplement Number
Suffix
Field Terminator
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18

VARIABLE FIXED FIELDS


Indicators
Number of Directory Entries
Date Entered on File
Date Code
Date 1
Date 2
Country Code
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
Illustration Codes
Intellectual Level
Form of Reproduction
Form of Contents
Government Publication
Conference or Meeting
Festschrift
Index Present
Main Entry in Body
Biography
Fiction
Language Code
Field Terminator
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44

INDICATOR TABLE

Tag	Field		Indicator		
003	LANGUAGE	Multilanguage			0
		Translation			1
050	LC CALL NUMBER	Book in LC			0
		Book Not in LC			1
	MAIN ENTRY		Main Entry Not Subject		Main Entry is Subject
100	(Personal Name)	Forename	0		4
		Single Surname	1		5
		Multiple Surname	2		6
		Name of Family	3		7
110 111	(Corporate Name)	Surname (inverted)	0		4
		Place, or Place + Name	1		5
		Name (direct Order)	2		6
120	(Corporate Name with Form Subheading)		0		1
130	(Uniform Title Heading)		0		1
200	UNIFORM TITLE	Not Printed on LC Cards			0
		Printed on LC Cards			1
210	ROMANIZED TITLE	No Title Added Entry			0
		Title Added Entry			1
240	TITLE STATEMENT	No Title Added Entry			0
		Title Added Entry			1
261	PUBLISHER	Publisher Not Main Entry			0
		Publisher Is Main Entry			1
	SERIES NOTES		Author Not Main Entry		Author is Main Entry
400	(Personal Author/Title)	Forename	0		4
		Single Surname	1		5
		Multiple Surname	2		6
		Name of Family	3		7
410 411	(Corporate Author/Title	Surname (inverted)	0		4
		Place, or Place + Name	1		5
		Name (direct order)	2		6
490	(Series Untraced or Traced Differently)	Series Not Traced			0
		Series Traced Differently			1
	SUBJECT ADDED ENTRIES				
600	(Personal)	Forename			0
		Single Surname			1
		Multiple Surname			2
		Name of Family			3
610 611	(Corporate)	Surname (inverted)			0
		Place, or Place + Name			1
		Name (direct order)			2
	OTHER ADDED ENTRIES		Alternative	Secondary	Analytical
700	(Personal)	Forename	@	D	H
		Single Surname	A	E	I
		Multiple Surname	B	F	J
		Name of Family	C	G	K
710 711	(Corporate)	Surname (inverted)	@	D	H
		Place, or Place + Name	A	E	I
		Name (direct order)	B	F	J
720	(Corporate with Form Subheading)		0	1	2
730	(Uniform Title Heading)		0	1	2
	SERIES ADDED ENTRIES				
800	(Personal Author/Title)	Forename			0
		Single Surname			1
		Multiple Surname			2
		Name of Family			3
810 811	(Corporate/Author/Title)	Surname (inverted)			0
		Place, or Place + Name			1
		Name (direct order)			2

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OFFICE OF EDUCATION

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THE MARC II FORMAT

A Communications Format For Bibliographic Data

Prepared by

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INFORMATION SYSTEMS OFFICE

LIBRARY OF CONGRESS

Washington, D. C. · *January, 1968*

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Special thanks go to Hillis L. Griffin, Argonne National Laboratory; Paul J. Fasana, Columbia University; Foster M. Palmer, Harvard University; Alan R. Benenfeld and Peter Kugel, Massachusetts Institute of Technology (Project INTREX); Paul St. Pierre and Mary Jane Reed, Rensselaer Polytechnic Institute; Kelley L. Cartwright, University of California; Charles T. Payne, Carol Woolpy, and Ann Loidl, University of Chicago; Ritvars Bregzis and Gerald Weeks, University of Toronto; Alexander Cain and Irwin H. Pizer, Upstate Medical Center, Syracuse, New York; and Frederick G. Kilgour and David Weisbrod, Yale University.

A similar debt is owed to staff members of Inforonics, Inc., working on a regional processing center for the New England Board of Higher Education, and to the Theodore Stein Company and its studies for the New York State Library and the New York Public Library. The study of the MARC format fortunately coincided with the visit to the Library of Congress by Peter Brown of the Bodleian Library, Oxford, and Richard Coward of the British National Bibliography. They not only contributed ideas but also provided a fresh and welcome viewpoint. At the Library, colleagues in the Processing Department spent many hours supplying practical information and advice on the technical aspects of the LC cataloging format. The authors also maintained close cooperation with staff members of the National Agricultural Library and the National Library of Medicine and with members of the Sub-Panel on Transfer of Bibliographic Descriptions by Magnetic Tape of the Committee on Scientific and Technical Information (COSATI).

Existing and developmental formats from many libraries were examined in the course of the study. Of special interest were those at the Air Force Cambridge Research Laboratory at Boston, Mass.; Florida Atlantic University; Massachusetts Institute of

Technology (Project INTREX); University of California at Santa Cruz; University of Chicago; University of New Mexico School of Medicine; University of Toronto; Upstate Medical Center of the State University of New York at Syracuse; and Yale University.

During the course of investigation, the firm of Coyle and Stewart, Computer Applications Consultants, prepared a critique of the new format and participated in many of the decisions leading to the present design.

Publications which were useful included:

Cartwright, Kelley L. and Ralph M. Shoffner. Catalogs in book form. [Berkeley] Institute of Library Research, University of California, 1967. 1 v. (various pagings)

Curran, Ann T. and Henriette D. Avram. The identification of data elements in bibliographic records; final report of the Special Project on Data Elements for the Subcommittee on Machine Input Records (SC-2) of the Sectional Committee on Library Work and Documentation (Z-39) of the United States of America Standards Institute. [Needham, Mass.] 1967. 1 v. (various pagings)

Lang, F. H. The identification of data in the library field. Translation by S. E. Furth. [n. p.] 1967. 30 l.

Stanford L. Optner & Associates. Report on an integrated data processing system for library technical services to the Public Library, City of Los Angeles. Los Angeles, 1964. 1 v. (various pagings)

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INTRODUCTION

The MARC (Machine-Readable Cataloging) Pilot Project was an experiment to test the feasibility of distributing Library of Congress cataloging in machine-readable form to a variety of users. This project grew out of the conviction of many librarians that automation was becoming necessary if libraries were to keep up with the rising tide of new materials and the mounting demand for rapid information. Although there were other library procedures which stood to profit from mechanization, it was felt that devising a method of recording bibliographical information in machine-readable form was basic to the solution of other problems.

There were a number of problems to be surmounted. Primarily, there was no established machine format, and there was lack of agreement among librarians as to what access points were needed in order to take full advantage of an automated system.

As the largest distributor of cataloging information, the Library of Congress was the obvious choice to develop an experimental bibliographical format. Work began early in 1965, and in June of that year the Library published the first draft of a format based on standard LC cataloging practices and suggestions from experts throughout the library field. This report was subjected to intensive review by both the Library of Congress and the library community.

Interest spread, and a number of libraries expressed willingness to participate in a pilot project to experiment in the use of machine-readable cataloging data. Using such criteria as computer equipment available, proposed utilization of cataloging data, geographical location, and type of library, sixteen participants were selected. The first tapes containing English-language titles with 1966 imprints were sent out in November 1966. Since the end of the Pilot Project in June 1967, the Library of Congress has moved into a new phase of development and testing which should culminate in an operational distribution service in 1968. In the interim, the Library is continuing its tape distribution to the original participants.

One immediate result of the distribution of the MARC tapes has been stimulation of interest in the concept of library data transmission. It has become evident that the MARC experiment has suggested to the library community the possibility that individual libraries can use a MARC-like system to contribute data from their own original cataloging for the use of others. Libraries will not only receive data from a centralized source like LC but also may send data, bringing the long anticipated concept of a network of libraries that can create and exploit a common data base much closer to reality.

Essential to such an exchange of data is a standardized "communications format." It is recognized that each institution may have an individualized local format tailored to its own needs. Many kinds of machines will probably be used. But if an institution is to send or receive data, only a single translation program should be necessary to convert the local format from or to the communications format.

One of the most important aspects of the MARC Pilot Project was the evaluation of the MARC I format. Having received a body of feedback from the MARC participating libraries as well as from the Library's MARC staff, the Library has used this material to design a new MARC format that will better serve the library community. At the same time we realized that the new MARC format should have enough built-in flexibility to serve as the standardized communications format for a wide variety of bibliographic data.

In March 1967, the MARC staff began work on a new format. The following steps were followed in developing this format:

1. Collection of more precise information about the data elements themselves, both as to the frequency of occurrence and numbers of characters in a defined element and/or field.*

---

*In order to satisfy this requirement the Information Systems Office of the Library of Congress used a random sample collected in 1965 of recent catalog cards. The Card Division Record Set of regular printed catalog cards was the file from which the sample was drawn. The population was restricted to cards issued for the years 1950-64. The sample size for this period was 2224 cards. Before the design of the MARC II format, the sample was updated by the same selection method as the original 1950-64 sample to include 1965 and 1966 giving a total sample size of 2524. This sample will be hereafter referred to in the report as the Catalog Card Sample. For the statistical methods and mechanics by which this sample was constructed see: Henriette D. Avram, Kay D. Guiles, and Guthrie T. Meade, "Fields of Information on Library of Congress Catalog Cards: Analysis of a Random Sample, 1950-1964," The Library Quarterly, 37:180-192 (April 1967).

2. Analysis and evaluation of all reports from MARC participants and the Library's MARC staff.

3. Survey of machine formats for bibliographic data which have been designed for library applications in the United States and abroad and which have relevance to the MARC system.

4. Consultation with the National Agricultural Library and the National Library of Medicine.

5. Consultation with institutions which are active in library systems development and with those developing formats of their own.

6. Consultation with those departments of the Library of Congress which will be involved in the production of cataloging data or its use.

The communications format developed as a result of these procedures is designed to incorporate the following specifications:

1. Magnetic tape will be used as the storage and transmission medium. This does not preclude the use of other media in the future.

2. Transmission of the data between institutions will be accomplished by sending tape reels through the mails. It will be possible, however, to convert to other forms of transmission in the future.

3. The format will be flexible enough to allow a variety of local applications on a wide range of hardware configurations. Some of the criteria used to judge the flexibility and usefulness of the format were as follows:

    a. Printing--bibliographic data display in a variety of forms (3x5 cards, book catalogs, bibliographies, etc.)

    b. Catalog division--e.g. personal names used as author and subject may be filed together in a separate catalog.

c. Information retrieval--i.e. retrieval of data from any part of the record. Since so little is known about how a bibliographic record will be used in machine-readable form for retrieval, it was only possible to anticipate future applications.

d. Filing--e.g. indicating the type of name so that similar headings can be arranged in a logical order. (This problem is not completely resolved. The Library's Technical Processes Research Office and the Information Systems Office are now engaged in a joint study of this problem.)

Publication of the format does not commit the Library of Congress to include the explicit coding for all the data elements described. At the present time the Library is reviewing the effect of these coding procedures on its cataloging process. However, it was felt that withholding the publication of the report would not be in the best interests of the libraries that are engaged in planning for automation. The structure and content of the format described in the following pages will be put into effect in the operational MARC distribution system.

I. COMMUNICATIONS FORMAT

DEFINITIONS OF FORMAT TERMINOLOGY

Format

The term format shall be used to mean the structure, content, and coding of a record. The structure will provide the framework for incorporating both fixed and variable length fields within the record. The structure will be oriented toward machine processing effectiveness whenever possible, in addition to serving as a common vehicle for transferring data from one point to another.

The content is the data recorded in these fields.

The coding is the digital representation of the character set.

Data Element

A data element is a unit of information, e.g. pagination.*

Field

A field contains data elements. Each field is assigned a name which represents the contents of that field, e.g. collation. There are two kinds of fields: fixed and variable.

A fixed field contains a data element which is always expressed by the same number of characters. For example, the date of publication may always be expressed as four numeric characters:

1	9	6	6

Languages could be expressed with a three-character alpha code:

E	N	G	= English

---

*For the purpose of this report, the examples given will be those found in a catalog record.

A *variable field* contains a data element, the length of which cannot be predetermined. A variable field may contain more than one data element. In general, a data element will be variable in length, in the same way as the field which includes it, e.g. the collation is a variable field, made up of three data elements: pagination, illustration, and size. Another variable field could be place of publication, which is a single data element.

Record

A *record* is a collection of fields, treated as a unit. The information on a catalog card constitutes one example of a record.

Tag

A *tag* is a label which identifies a variable field.

Example: $\underbrace{\boxed{1|0|0}}_{\text{Tag}}$ = *personal name, main entry*

Indicator

An *indicator* is a code which supplies additional information about the field. The indicator will be physically located at the beginning of the field. (For the purpose of examples, the indicator will always be shown with the tag.)

Example: $\underbrace{\boxed{1|0|0}}_{\text{Tag}}\!\underbrace{\boxed{1}}_{\text{Indicator}}$ = personal name, main entry—*single surname*

The indicator in the example given (surname) could be used for sorting according to library filing rules. The kind of information contained in an indicator can be quite different from field to field.

In contrast to the above example which contains filing information associated with a personal name, the indicator for the title field |2|4|0| could show that this title will be given an added entry.

Example: |2|4|0|1| = Title—added entry

Tag Indicator

Delimiter

A delimiter is a special symbol used for machine manipulation to separate data elements within a field.

Example: Collation: 24p.$illus.$23 cm.

The dollar sign is used in the above example as a delimiter to separate the collation into subfields: pagination, illustrations, and size.

Character Position

A character position is the location of a particular character in a record when each character is numbered sequentially from the first character in the record.

Record Directory

A record directory is an index to the location of the variable fields within the record. It is a series of fixed fields (hereafter referred to as entries*) which contain the tags, the length, and the starting character position of the fields. (See page 15 for a description of the structure of the directory in the communications format.)

---

*This use of the term "entry" is not to be confused with the bibliographic meaning of entry.

Legend

A legend is a code associated with every record indicating the type of record. (See page 14 for a description of the legend used in the communications format.) A record for a monograph entered into a machine system for the first time could have the legend $\boxed{A}\boxed{M}\boxed{S}$ = Book, Monograph, in Series. The legend serves to define the characteristics of the format used on that particular record, i.e. the length of the fixed fields, the tagging scheme employed, the definition of the data elements, etc.

RECORD TERMINATOR

A character used to terminate each record within a file.

FIELD TERMINATOR

A character used to terminate each variable field within a record except the last variable field which is terminated by a Record Terminator.

Computer Design Considerations

Design Criteria

The philosophy underlying the development of the format was the achievement of a structure that would have wide applicability to all types of bibliographic data. The assumption was that it was not possible to completely analyze and categorize data elements for all kinds of material at this time. Therefore, the major goal was the design of a format structured in such a way that it would be hospitable to all kinds of bibliographic information. That is--the structure of all machine records will be identical, but for any given type of item, e.g. serials, maps, music, etc., the components of the format may have specific meanings and unique characteristics. In the work to date at the Library of Congress, the detailed analysis and development of definitions and tags has been restricted to those data elements which are found in the bibliographic description of book materials. In the future, the Library plans to analyze and identify data elements for other forms of material that are in its collections.

Another goal was to develop a format which could be used in a wide variety of computers to manipulate machine-readable bibliographic data. Thus, any user library would have to contend with only one format even though it might receive and/or transmit from or to many sources.

Although the basic consideration in the design of the format was the exchange function, consideration was also given to features which would facilitate local library use of the records without restructuring the format. These features were added on the assumption that some libraries will restructure the record for local use and others will manipulate the data as is. The experience in the MARC Pilot Project cannot be considered conclusive. Limited evidence, however, indicates that in most cases the MARC I record was restructured by those libraries having existing machine systems but was accepted as designed by those libraries implementing systems for the first time. It is difficult to design a record for optimal use for all library functions. The designers of the format tried to take into account many library activities and, therefore, had to consider in their design the trade-offs necessary to satisfy the majority.

The analysis that preceded the preparation of the new format also took into consideration in great detail both character and word machines. All machines have their unique repertoire of instructions for manipulation of data. Word machines may have 36 bit, 48 bit, etc. word length. An additional complication is the use of assembly language versus the use of higher level programming languages. To satisfy most effectively the needs of the universe of computers and programmers is indeed a formidable task, if not an impossible one. However, insofar as possible, the format has been designed to include ease of manipulation for both character and word machines and use of different programming languages.

Structure of Communications Format

The communications format is schematically presented below:

Field 1 Leader	Field 2 Directory	Field 3 Variable Control Number	Field 4 Variable Fixed Field	Field n Variable Field	Field n+1 Variable Field

Each record will terminate with a record terminator.

LEADER—FIELD 1

The leader will be fixed in length and will contain 12 characters. The number of characters in the leader was chosen to satisfy the majority of fixed word length machines, i.e. 12, 24, 36, or 48 bit word lengths, using either 6-bit or 8-bit character codes. Since field 2 is the directory and access to the directory for manipulation is more difficult to accomplish in fixed word machines, it is desirable to allow the user to be able to predetermine by individual word length and code where the directory will fall in the record. The following, although not exhaustive, demonstrates the positioning of the directory for a variety of word machines:

Word Size	Starting Character Position of Directory for 6-bit Code	Starting Character Position of Directory for 8-bit Code
12 bits	2 characters 6 6 Most significant position* of 7th word in record	1 character 8 Most significant position** of 13th word in record
24 bits	4 characters 6 6 6 6 Most significant position of 4th word in record	3 characters 8 8 8 Most significant position of 5th word in record

---

*Most significant position is defined as the left-most character in the word.

**In the examples, where the code, i.e. 6-bit or 8-bit, was not a multiple of the size of the word, it was assumed that the remaining bits would not contain data.

Word Size	Starting Character Position of Directory for 6-bit Code	Starting Character Position of Directory for 8-bit Code
36 bits	6 characters 6 6 6 6 6 6 Most significant position of 3d word in record	4 characters b̸ 8 8 8 8 Most significant position of 4th word in record
48 bits	8 characters 6 6 6 6 6 6 6 6 2d word in record*	6 characters 8 8 8 8 8 8 Most significant position of 3d word in record

The leader will consist of three sections:

A. Record Length. The record length in the leader is the number of characters in the logical record length** and will consist of five numeric characters. This five figure number will include its own five figures in the total record character count. The logical record length will always be present in character positions 1-5:

Example:	0	0	5	4	0
	1	2	3	4	5

It was determined that a five-figure logical record count was necessary for those institutions exchanging bibliographic data containing abstracts. Records of this length are unusual in the bibliographic description of monographs and serials by current cataloging methods. However, to allow for expansion and to adhere to the premise that the structure will be hospitable to the recording of all bibliographic information, the five-figure logical record count was considered to be necessary.***

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*In the 48-bit word machine with 6-bit code, the directory would begin in the 5th character of the 2d word.

**Logical record--the basic unit of information in a processing system. The logical record contains all the fields necessary to describe an item. In the communications format, the logical record is 99,999 characters (maximum length).

***See Appendix V for a description of the relationship of the logical record and the physical record on magnetic tape in the communications format.

B. Record Status. This single character will indicate whether the record is changed, deleted, etc.

C. Legend. The function of the legend is to identify and describe the record. The identification and description implies (1) the content of the record, e.g. a book cataloged as a serial or manuscripts cataloged as a collection, (2) the components of the format structure, i.e. the meanings and structure of the tags and indicators, and (3) the hierarchical level, e.g. a book which is part of a series, etc.

Acting on the supposition that one format cannot encompass all bibliographic records, the concept of the legend will bring all various record types into a common frame of reference, each type having a legend which will identify and describe it.

The legend will always be present and will have the same number of characters in precisely the same character positions in the leader, regardless of the type of data contained in the record. The legend will occupy character positions 7-12.

The legend will contain codes to represent the following:

Character position 7--Legend control
Character position 8--Type of record
Character positions 9-11--Hierarchical levels (as many characters as necessary are used--the rest are left blank)
Character position 12--Indicator count

Example:

0	0	5	4	0	N	0	A	A	S	ƀ	2	**
1	2	3	4	5	6	7	8	9	10	11	12	

Character position 7--No legend extension
Character position 8--Language materials—Printed, i.e. books
Character position 9--Journal article
Character position 10--Serial entry
Character positions 11-Blank
Character position 12--2 indicators per variable field

(See page 40 for a description of the contents and definitions of the legend for monographs.)

**ƀ=blank.

DIRECTORY—FIELD 2

The directory is defined as a series of fixed fields (hereafter referred to as entries) which contain the tag, the length, and the starting position of each of the major data categories in the variable fields, including the variable control number field and the variable fixed field. Since the number of variable fields in a record cannot be predetermined, the directory, although composed of fixed fields, is variable in length. That is, there is an entry in the directory made up of a tag, length, and starting character position of each major variable field. However, the number of entries, i.e. tag, length, starting character position, will vary from record to record.

Each entry (12 characters) in field 2 (directory) is composed of 3 subfields, fixed in length. The 12 characters per entry are divided as follows: 3 for tag, 4 for length, and 5 for starting character position. A field terminator will be included at the end of the directory.

It should be noted that the directory will be automatically generated by computer program.

A. Tag. The tag is the identification of the data field. Depending upon the type of record, the tag could identify type of data field and function of data field, i.e. personal name main entry.

Example: $\boxed{1|0|0}$ = Personal name, main entry

Some portion of the tag could be maintained in strict numeric order to facilitate machine searching. If this portion of the tag is kept in numeric sequence, a search for a specific data element by tag can be halted when a larger value of that portion of the tag is reached. Therefore, it would not be necessary to exhaust the directory for each element of data desired. For example, in the monograph format, the tags could be maintained in a numeric order according to the first digit. A sequence might be: 300, 490, 410, 418, 500. A search for tag 440 would cease when tag 500 was reached.

B. Length. The length in an entry is the length of that variable data field which the entry describes and will include in its count only the total number of characters in the variable field (including the indicators and the end-of-field mark). The count will not include itself.

If the length of a variable field should exceed the maximum length allowed, two entries will be made in the directory for that field according to the following rule:

> An entry will consist of tag, length, and starting character position; but the length will be set to 0 (zero) to indicate there is additional information for the same field in the next entry in the directory. The length 0 (zero) will imply the maximum length allowed in that entry. The next entry will contain the same tag. However, the length of the variable field will be that of this new entry and the starting character position will be that of the overflow data. For example, if the length of a variable data field is 10100 characters and the maximum length for an entry in the directory is 9999, the entry in the directory for this variable field would consist of two entries which would be recorded as follows:

Entry	Tag	Length	Starting Character Position
1	100	0000	00100
2	100	0101	10099

> The length in entry 1 (where 0000 equals 9999) plus the length in entry 2 (where 0101 equals 101) equals the length of the variable field (10100).

Although the length of a variable field will rarely exceed the maximum allowed for in the directory, this possibility must be taken into consideration.

C. Starting Character Position. The starting character position in the directory is defined as the location in the record of the first character of a variable field.

Example:

1	0	0	0	0	3	0	0	0	1	4	4
1	2	3	4	5	6	7	8	9	10	11	12

Character positions 1-3 are the tag of the entry
Character positions 4-7 are the length
Character positions 8-12 are the starting character
positions of the data element
identified by tag 100.

Character positions 1-12 (12 characters) represent one entry in the directory.

Having both a starting character position and a length is redundant since the length of a field can be computed by subtracting the starting character position of field n from field n+1. However, the advantages of the redundancy outweigh the additional characters needed to contain the length of the field.

There are several advantages in using the directory technique:

1. The variable field tags could be reordered in the directory and regardless of the order, the directory will always indicate the starting character position of the field. In addition, the variable fields themselves could be reordered and the directory modified to reflect the changes.*

2. The directory can be easily updated to reflect additions to the variable data. In fact, data can be added to the record and the directory updated without restructuring the contents of the variable data.**

3. The directory provides a more efficient technique for searching the variable fields to locate a specific data element. A constant value, i.e. 12, the number of characters in a directory entry, can be used to step through the directory, comparing the desired tag against the tags in the directory. Thus, it is not necessary to take into account the length of a variable field to obtain the next field's tag when the comparison is unsuccessful, as would be the case if the tag and length were to precede each variable data field.

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*See Appendix IV
**See Appendix III

4. The directory can be discarded from the locally maintained format, if an institution does not wish to use it. It can be automatically regenerated by an inspection of the variable fields when converting to the communications format.

In designing a directory, a judgment must be made concerning which data elements are considered major and should have their own tags as opposed to which data elements are minor and can be grouped together with one tag. In this context, major means those elements that are frequently searched for independently while minor means those which are usually searched for because of their relationship to another element. For example, in the imprint, each data element—place, publisher, and date—might be considered important enough to have an entry in the directory. In the case of a personal name entry, the date of birth would be considered important only in connection with the name and would not be given its own entry in the directory. In addition, the decision to include or exclude a data element from the directory might be based on the length of the data element itself. That is, it takes 12 character positions to describe an entry in the directory, and the data element in question might be less than 12 characters in length. There are no rules to govern the makeup of the directory, and the designer of the format for the particular type of data will have to individually arrive at an optimum solution.

Therefore, it may become necessary to subdivide certain data categories in the variable fields into subfields in order to provide access to the individual data element. A delimiter will be used for this purpose.

D. Conventions.

1. Tags 000 (variable control number), 001 (variable fixed field), and 002 (legend extension) will never be reordered in the directory or in the data. This will facilitate access to these fields and determination of the end of the directory.

2. If tags are included in the directory even though there is no corresponding data field, the length and the starting character position for these tags will be 0.

VARIABLE CONTROL NUMBER FIELD—FIELD 3

The control number is defined as a unique number assigned to a record. For example, the Library of Congress catalog card number is a unique number associated with each work for which the Library of Congress makes a printed card. Because it is impossible to predict the length of control numbers across all institutions for all types of information, the control number will be in the first variable field following the directory. The field is variable when defined for the broad spectrum of machine-readable communications formats. For any particular type of record from an institution or perhaps across institutions, Field 3 could be fixed in length. It is recognized that the placement of the control number in the first variable field will necessitate additional steps to access the number for sorting, merging, and matching. However, the location of the control number given as the first entry in the directory makes this a straightforward operation while maintaining a format design general enough to satisfy a control number of any length.

VARIABLE FIXED FIELDS—FIELD 4

Field 4, like Field 3, is variable when defined for all types of records. For any particular type of record, however, Field 4 is fixed in length. For example, the fixed fields for monographs could be 70 characters in length and would remain at 70 characters for every record that described a monograph. However, the fixed fields for the format for serials could be 110 characters in length.

The tag and the length of the fixed fields are recorded in the directory in the same manner as true variable fields. The fixed field, now a variable field, will be the second data field in the record. This will allow a library to add fields not present, or delete fields not desired without modifying the communications format structure. The capability to accommodate additions means no blank areas need be entered in the fixed fields for future expansion. By handling fixed fields in the same manner as all data fields, software is simplified, and the record is more flexible.

Data elements in Field 4 are fixed in length. The purpose of the fixed length data elements are:

1. To indicate characteristics that apply to the whole record, e.g. the work is a government publication.

2. To make explicit certain information which is implicit in the contents of the record, e.g. country of publication.

3. To augment the record with useful information not usually found in a catalog record, e.g. the work cataloged has an index.

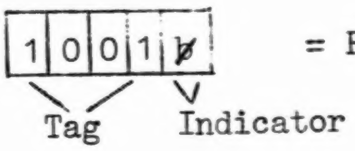
4. To show the presence or absence of certain important data elements found in the variable fields, thus making records with these data elements easily selected from a file, e.g. illustration indicators.

5. To code information contained in the variable fields and make it more easily accessible, e.g. a four-character code for publisher.

VARIABLE FIELDS—FIELD N

The remaining data fields in the communications format are variable fields. There will be no tags in the variable fields because these will be recorded in the directory. Each variable length field will have a fixed-length indicator to further describe the particular data field identified by the tag. The indicator will precede the data in the field. The content and the meaning of the indicator is unique to each data field. For example, a personal name main entry could have an associated indicator for the form of name to facilitate arrangement of the entries in book catalogs. The advantage of the indicator associated with a field as opposed to the indicator located in the fixed field is that specific characteristics of the data field can be described in fixed locations but only when the field is present. Therefore, it is not necessary to reserve space in the fixed field portion of the record when that indicator is not applicable because its data field is not present. The absence of the field and therefore the absence of the indicator suffices.

Example:



= Personal name main entry—
single surname

The indicator count (a single numeric character 0-9) in the legend will define the length of the indicator for a given type of format. For example, the format for monographs will contain a 2 in the indicator count, and therefore each variable length field will begin with a 2-character indicator. In a serial format, the number of indicator characters could be 3, 5, or any number between 0 (zero) and 9. The indicator character positions in a given format will be set to blank if not used.

Each variable field (including the directory, the variable control number field, and the variable fixed field) will end with a field terminator. The field terminator has been included (1) to facilitate the use of some higher-level programming languages,

(2) to build in an extra checking device, and (3) to satisfy those users who do not wish to perform arithmetic or indexing operations using the actual length of the field, but rather using the technique of branching on a field terminator.

II. DATA ORGANIZATION OF MONOGRAPHS IN THE COMMUNICATIONS FORMAT

"Traditional" Versus "Analytical" Organization of Catalog Information

There are two basic approaches to the organization of machine-readable bibliographic information. The "traditional" approach is essentially the grouping of data elements by bibliographic function, i.e. main entry, subject entry, etc. The arrangement follows the order found on the library catalog card (see illustration A, page 24). This format facilitates the printing of such library tools as cards and book catalogs. The other approach, termed the "analytical" approach, is the grouping of like information by type such as personal names or titles (see illustration B, page 24). For those institutions interested in using the format principally for retrieval purposes, the grouping together of data by type is generally thought to be more efficient. Currently, the major interest in the MARC record format centers around the printing application. However, it can be foreseen that emphasis on data retrieval applications will grow and become increasingly important.

The two basic approaches to organization of material have engendered strong feelings among people involved in the problem, but in some ways they are essentially equivalent. For example, in the traditional approach, the main entry is flagged as a personal name or a corporate name, whereas in the analytical approach, a personal name is flagged as a main entry or an added entry.

ILLUSTRATION A *

Traditional

FUNCTION	CATALOGING DATA ELEMENT	KIND OF HEADING
Main Entry	Richards, James T., 1923-	Personal Name
Title Statement	Automation for Bogmore County libraries. Report of a pilot project conducted by James T. Richards and Daniel J. Haskell of the Information Survey Corporation in the Centerville Public Library.	Title
Imprint	New York, Foundation for Public Libraries, 1967.	
Collation	98 p. illus. 24 cm.	
Series Note	(Foundation for Public Libraries. Automation series, no. 10)	Corporate Name/Title
Subjects	1. Libraries — Automation 2. Public Libraries — Bogmore County, Pa. 3. Centerville, Pa. Public Library	Topical Subject Topical Subject Corporate Name
Added Entries	I. Haskell, Daniel John, joint author II. Information Survey Corporation III. Title (Series)	Personal Name Corporate Name

ILLUSTRATION B

Analytical

KIND OF HEADING	CATALOGING DATA ELEMENT	FUNCTION
Personal Name	Richards, James T., 1923- Haskell, Daniel John, joint author	Main Entry Added Entry
Corporate Name	Information Survey Corporation. Foundation for Public Libraries. Automation series, no. 10 Centerville, Pa. Public Library	Added Entry Series Added Entry Subject
Topical Subject	Libraries -- Automation Public Libraries -- Bogmore County, Pa.	Subject Subject
Title	Automation for Bogmore County libraries. Report of a pilot project conducted by James T. Richards and Daniel J. Haskell of the Information Survey Corporation in the Centerville Public Library Automation series, no. 10	Title Statement Series Title
Imprint	New York, Foundation for Public Libraries, 1967.	
Collation	98 p. illus. 24 cm.	

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* A hypothetical example based on no existing publication.

The merits of each approach were explored in the course of the development of the format. Since most data to be keyed for computer processing are received in the traditional bibliographic format, such as the catalog card, the preparation of input would be facilitated if the traditional approach were used. For example, the generation of MARC records by any institution utilizing traditional cataloging information would require less training for editors and keyboard operators. The preparation of input data using the analytical approach implies that the data may have to be restructured at input. Of course, it would be possible to input the data in traditional order and manipulate it by a computer program to translate it into the analytical format. So far, however, the advantages for data retrieval seem too slight to justify this procedure. A brief digression to explain data retrieval will illustrate this point. A data retrieval system allows the user to selectively retrieve records or portions of records maintained on mass storage units. This collection of records is called a data base. There are three main aspects of data retrieval systems: the addition of records to the data base, their subsequent retrieval, and the selective display of data from records once retrieved.

In the current technology, it is impractical to retrieve from a large data base by a brute force search of all records in the data base. Therefore, the usual procedure is to maintain a set of indexes containing keywords, i.e. author, title, subject, etc., extracted from the records at the time they are added to the data base. These are the items used to locate and retrieve quickly on demand. At the time a record is added to the data base and the indexes are augmented, having the elements grouped by type, i.e. name, title, etc., would offer some slight advantage, but not a significant one since the extraction of keywords from the record for preparation of indexes is a one-time operation. How a particular data element is used in a record, i.e. its function: main entry, title, etc., can be carried compactly along with the data in the index so that during retrieval one can get an element and its function without having to refer back to the complete master record in the mass-storage device. Therefore, for index retrieval purposes, the analytical grouping does not provide more efficient searching techniques, because the resulting file structure for the index could be identical regardless of whether the original record was structured in the traditional or the analytical approach.

At the time data are displayed, the analytical grouping by type might be useful. It would reduce the amount of searching through the variable fields to obtain desired data elements. For instance, all names associated with a record would be together in storage. However, this facility can be obtained in a straightforward manner through the use of the directory technique (see page 18). It appears that the analytical grouping offers the data retrieval user no significant advantage over the traditional groupings when the latter is augmented by a directory.

By contrast, the user who is primarily interested in preparing printed material, i.e. cards, book catalogs, etc., would be considerably inconvenienced by the organization of data in the analytical grouping. Reformatting the data would require significant programming effort and computer processing time, and furthermore, each time the record would be printed the process would be repeated. Based on the above analysis, it was decided that the library community would best be served by improving the present MARC I format rather than designing a record structured on an analytical approach.

Tagging Structure

The MARC II format for monographs provides for a three-character tag for each variable field. The first digit of the tag will indicate the function of the data element in the field. Certain mnemonic features have been built into the second and third digits of the tags, e.g. in the case of main entries, added entries, subject entries, and series entries, the second and third digits indicate the kind of name.

Example:

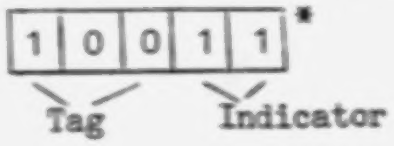
7	1	1

Where: the first digit = Added Entry (function)
the second digit = Corporate Name (kind of name)
the third digit = Conference (breakdown of kind of name)

Indicator Structure

The MARC II format for monographs reserves two character positions at the beginning of each variable field for indicators. These indicators will provide additional information about the field. Those indicator positions not used will be filed with blanks.

Example:



Where: Tag = Personal Name Main Entry

First Indicator = Single Surname

Second Indicator = Cross references to be found on cross reference tape.

The second indicator will not be used at this time and will be carried as a blank. In the remainder of the report it will not be referred to or shown.

In some cases more than one type of information will be provided in a single character position. This will be provided by the process of stacked coding.

Example: Two types of information are provided for main entries that are personal names:

1. Form of name

Forename	= 0
Single Surname	= 1
Multiple Surname	= 2
Name of Family	= 3

---

*For clarity in the examples, the indicators will always be shown in association with the tags.

2. Is main entry also subject?

No = 0
Yes = 1

Codes will be stacked by associating bit configurations with the two levels of information being coded, i.e. the form of name, and whether the main entry is also the subject? An example of how this can be done using the USA Standard Code for Information Exchange (USASCII) follows:

Decimal Characters	Binary Characters	USASCII Codes for Decimal Characters
0	0000	0011 0000
1	0001	0011 0001
2	0010	0011 0010
3	0011	0011 0011
4	0100	0011 0100
5	0101	0011 0101
6	0110	0011 0110
7	0111	0011 0111
8	1000	0011 1000
9	1001	0011 1001

From the above list, it may be seen that the first four bits of the USASCII code remain the same for all decimal numbers. The last four actually constitute the number written in binary form. To produce a stacked code number, the last four bits are split into two, i.e. $\boxed{01 \mid 00}$. The first two bits correspond to the indicator set at the query "Is main entry also subject?" If the main entry is not subject, this indicator is set at 0 (zero), and the first two bits will be 00 (double zero). If the opposite is true the indicator will be set at 1 and the first two bits will be 01. The last two bits correspond to the code set for form of personal name as follows:

Form of Name	Indicator	Last 2 bits of USASCII
Forename	0	00
Single Surname	1	01
Multiple Surname	2	10
Name of Family	3	11

When both types of information are needed, the indicator will be associated in one USASCII character as follows:

$$\underbrace{0011}_{\substack{\text{Always same for}\\\text{decimal character}}}\quad\underbrace{01}_{\substack{\text{Main entry}\\\text{is subject}}}\quad\underbrace{10}_{\substack{\text{Multiple}\\\text{surname}}} = \text{character 6 in USASCII}$$

The two types of information may therefore be coded as one character in stacked form as follows:

	Main entry is not subject	Main entry is subject
Forename	0	4
Single Surname	1	5
Multiple Surname	2	6
Name of Family	3	7

Heading Structure

Headings will generally be in the form established by the Library of Congress for use in its catalogs. Headings established before March 1967 will be in the form specified in the ALA Cataloging Rules for Author and Title Entries (henceforth referred to as ALA Rules). Headings established after March 1967 by the Library will in most cases be in the form specified in the Anglo-American Cataloging Rules (AA Rules).

Author headings can be categorized in four main groups. These categories remain the same regardless of the function of the heading, i.e. main entry, subject entry, etc. The second character of the entry tag will be used to define the category according to the following code:

	0		Personal names
	1		Corporate names
	2		Corporate names with form subheading
	3		Uniform title headings

The third character of the tag will generally be a zero with the following exceptions:

> Some libraries may wish to break down further the categories of headings listed below. For example, corporate names may be subdivided into conferences, government bodies, etc.

`| |1|0|` Corporate names

`| |1|1|` Conferences

The Library of Congress will subdivide only in the case of corporate bodies (see page 34).

When the heading is an author-title heading, the title will have its own tag. The second character will be the same as that used to define the heading. The third character will be an "8."

Example: `|7|0|0|` Smith, Randolph Arthur.

`|7|0|8|` The Williams incident.

PERSONAL NAMES. (Tag `| |0| |`)

A. <u>Form of name</u>. The form of name prescribed by the <u>ALA</u> or <u>AA Rules</u> will be modified in the following ways:

1. Titles, e.g. Sir, Lord, etc. will follow the forename instead of the surname.

Example: Churchill, Winston Leonard Spencer, Sir,
1874-1965.

2. Date modifiers (b., d., fl., etc.) will follow the date(s).

B. <u>Delimiters</u>. A personal name may include as many as four subfields as follows:

Name = Surname and forenames

Title = all titles designating rank, office, nobility, terms of address, initials of an academic degree or denoting membership in an organization, etc.

Identifier = generally means dates. Headings established according to the old ALA rules may include identifiers such as "clockmaker," "poet," etc.

Relator = Those phrases which describe the relationship between an author and a work (ed., tr., comp., etc.)

These subfields will be separated by delimiters according to the following patterns:

Name

Name$$Identifier

Name$$Identifier$Relator

Name$Title

Name$Title$Identifier

Name$Title$Identifier$Relator

Name$Title$$Relator

Name$$$Relator

C. Indicators. To facilitate certain filing arrangements, an indicator describing the form of personal name will be associated with the tag.*

---

*Although the feasibility of complex filing of catalog entries by computer has yet to be demonstrated, a machine-readable format should allow as much flexibility as possible for programming sort sequences. This requirement has been kept in mind in designing the patterns of the subdivision of indicators for main, added and subject entries in the MARC II format. These detailed breakdowns will make possible the creation of structured arrangements of the kind used in the book catalogs of the Library of Congress and other large research libraries. The presence of these indicators in the MARC II record should not be regarded as a constraint against more simple, alphabetical arrangements. If a library wishes, it should be possible to write programs that will ignore these indicators in filing.

Forename, e.g. John the Baptist = 0

Single Surname, e.g. Walpole, William Winchester = 1

Multiple Surname, e.g. Johnson Smith, Geoffrey = 2

Name of Family*, e.g. Smith Family = 3

Example: | |0|0|2| Johnson Smith, Geoffrey.
Tag Indicator

CORPORATE NAMES (Tag | |1| |).

A. Breakdown of Corporate Names. The Library of Congress will treat conferences and meetings as a subtype of corporate names in the tagging scheme because this kind of library material is difficult to control. The structure of a conference heading lends itself to KWIC (Key Word in Context) indexing and other special techniques for bibliographic control. Rule 87 of the AA Rules will determine the definition of this heading. Tags for conferences will have a "1" in the third character of the tag.

Example: | |1|1| Conference on Categorical Algebra,
University of California, San
Diego, 1965.

Local libraries may break down different corporate headings by using other numbers in the third character of the tag if they wish.

B. Indicators. Indicators for corporate names will describe the [redacted] following form of name:

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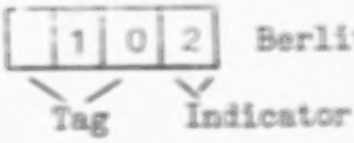
*Name of Family is used only as a subject heading in the cataloging of monographic-book materials. However, for the purposes of consistency in the tagging and indicator structure, it is described here.

Inverted surname, e.g. Little, (A.D.) Inc. = 0

Place, or place plus name of corporate body, e.g. San Francisco. Museum of Art or Quebec (Province) = 1

Name of corporate body, e.g. Berlitz Schools of Languages of America = 2

Example:



Berlitz Schools of Languages of America.

C. Delimiters

1. Corporate names (excluding names of conferences and meetings).

Delimiters will be used to separate corporate subheadings.

Example: Bell and Howell.$Micro Photo Division.

a. The name of a place at the beginning of a heading will be considered the highest hierarchical unit of the corporate name.

Examples: California.$University.$College of Environmental Design.

Cuyahoga Co., Ohio.$Library.

b. Delimiters will not be used between place name units separated by a commas or parentheses.

Examples: Medina, Ohio.$Senior High School.$Class of 1966.

Washington (State)$Pollution Control Commission

2. Names of Conferences or Meetings.

Delimiters will be used to separate the following units:

Name of the conference or meeting, Number, Place, Date.

The absence of one of the units is indicated by a delimiter.

Examples: Nobel Conference.$1st,$Gustavus Adolphus College,$1965.
Symposium on Physical Activity and the Heart,$$Helsinki,$1964.

The place unit can be made up of the name of an institution and/or place name.

Examples: Conference on Categorical Algebra,$$University of California, San Diego,$1965.

CORPORATE NAMES WITH FORM SUBHEADINGS (Tag | |2| |)

A. These headings usually contain an element of a corporate name followed by a form subheading which in most cases can be thought of as a title.

Example: Catholic Church. Liturgy and ritual.
New York (State) Laws, statutes, etc.

B. There will be no indicator for form of name used with this heading.

C. Corporate names with form subheadings will be delimited between the corporate name and the form subheading. No additional elements are to be delimited.

Examples: Catholic Church.$Liturgy and ritual.
New York (State).$Laws, statutes, etc.

UNIFORM TITLE HEADINGS (Tag $\boxed{}\boxed{3}\boxed{}$)

A. A uniform title heading is a title used as a bibliographic entry, i.e. main entry, subject entry, etc. It must be distinguished from those uniform titles, often called "conventional" or "filing" titles, which can be interposed in square brackets between the main entry and the transcription of the title page (see page 82). Works entered under title (such as periodicals, encyclopedias, etc.) which have no main entry _other_ than the title, are tagged as $\boxed{2}\boxed{4}\boxed{0}$. If these titles are used on other records as added entries, subject entries, etc., they are tagged as uniform titles.

Examples: Chanson de Roland
International review (Zürich)

B. Uniform title headings are not delimited.

Conventions

MULTIPLE INITIALS

No spaces will be left between multiple initials other than personal names, e.g. IBM, U.S. _but_ Sharkey, E. H.

SPACES

Since machine records are alterable and do not need spaces left for filling in names and dates at a later time, no spaces will be left after initials or after open dates for future additions. All brackets and parentheses will be closed.

Examples: Smith, William A., 1918-, ed.
Germany (Federal Republic, 1949-)

DELIMITERS*

The $ will be carried on the tape record as a non-printing symbol. Therefore, $ = one space on input and in the tape record. (This will eliminate conflicts in character counts during manipulation of data.) If more than one space is needed, the additional space may be put in, e.g. $ sp = 2 spaces.**

NULL CHARACTERS

A null character will be used to indicate that no intelligence is recorded in a character space. The null character used in the communications format will be a space (blank). This coincides with the conventional concept of a space (or blank) on a sheet of paper. In addition, since in USASII it is the lowest order graphic symbol in the 7-bit, 8-bit,*** and proposed 6-bit codes,**** its collating sequence makes it a terminal character.

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*The symbol arbitrarily chosen for use in this report is the dollar sign. This does not necessarily mean that this will be used in the operational system.

**There are many printing conventions which need further consideration to determine whether they should be part of the machine record or a function of the computer program. These conventions will be elaborated in later reports as the MARC system is further refined.

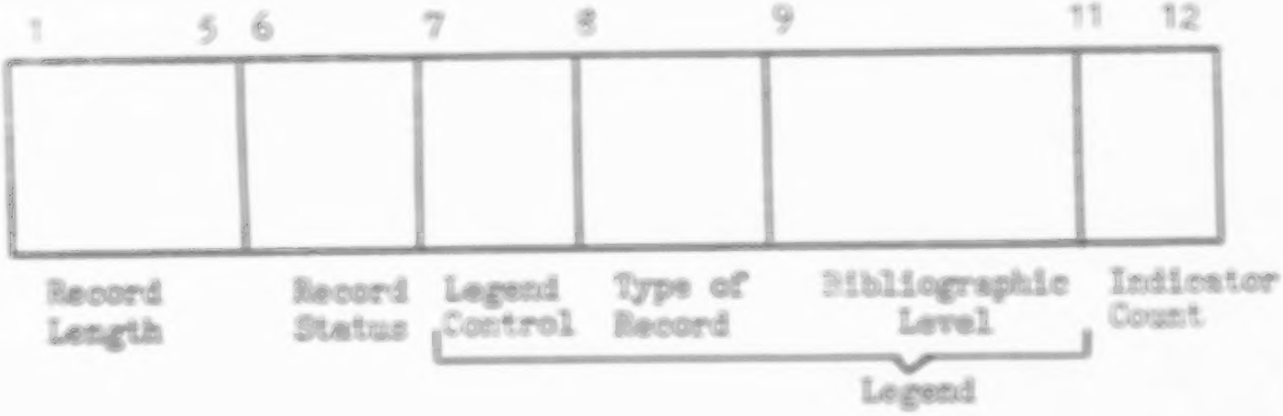
***The proposed 8-bit code will be an extended form of the standard 7-bit USASCII. Some of the standard USASCII characters, such as the backward slash will not be used. Diacritical characters will be left in their standard position (unused) and duplicated in another portion of the code set reserved for diacriticals.

****The proposed 6-bit codes will be derived by removing the 6th bit and the 8th bit. The 8-bit code set will be divided into 4 sets. Columns 2, 3, 6 and 7 (of 7-bit USASCII) will be the standard set. The other sets will be non-standard sets which will be reached by non-locking escape codes.

FIELD CONTENTS

Leader Contents Table

Elements Number	Name of Leader Data Element	Number of Characters	Character Position in Record
1.	Record Length	5	1-5
2.	Record Status	1	6
3.	Legend		
	a. Legend Control	1	7
	b. Type of Record	1	8
	c. Bibliographic Level	3	9-11
4.	Indicator Count	1	12


1
5
6
7
8
9
11
12
Record Length
Record Status
Legend Control
Type of Record
Bibliographic Level
Indicator Count
Legend

Leader Data Elements

Leader Data Element	Character Position in Record
RECORD LENGTH	1-5

This is a five-character numeric fixed field which contains the length of the physical record including itself. If the record length is fewer than five characters long, the number will be right justified with zero fill.

RECORD STATUS 6

This is a one-character alphabetic fixed field which defines the status of the record for file maintenance routines. The status codes are as follows:

N = New record

C = Changed or corrected record

D = Deleted record

O = Old record

Changed or corrected records can be of two types:

The original record contained minor keyboarding or editing errors and this record makes the correction.

The original LC printed card has been revised, and this record contains these revisions. The LC card number in the machine record will have as a suffix the symbol "R," "R2," or "R3," etc., depending upon the current version of the printed card.

LEGEND

A. Legend Control

This one-character field is supplied in order to allow users of the communications format to provide, if necessary, additional information to that found in the legend. This will allow flexibility in the structure of the legend by not restricting it to six characters. A blank in the field means there is no extension of the legend. A number in this field means that additional information can be found in variable field 002.

B. Type of Record 8

A one-character alphabetic fixed field will identify the type of record found in the data which follows. According to the AA Rules, there are differences in the cataloging formats used to describe different types of library materials. Codes have been assigned arbitrarily to some of these types as follows:

A = Language materials--printed, i.e. books
B = Language materials--manuscript
C = Music, i.e. sheet music and volumes--printed
D = Music--manuscript
E = Maps and atlases--printed
F = Maps--manuscript
G = Motion pictures and filmstrips
H = Microform publications
I = Phonorecords and other sound recordings--language or spoken
J = Phonorecords and other sound recordings--Music

K = Pictures, designs, and other two-dimensional representations

L = Computer mediums, i.e. machine-readable data

In the present MARC distribution the only cataloging format used will be for "books," i.e. Code "A."

Other codes may be added for different kinds of library data. The codes for authority data have been assigned as follows:

X = Authority data - names
Y = Authority data - subjects

Additional codes will be assigned as needed.

C. Bibliographic Level

This fixed field may be up to three charac- 9-11
ters long and is used to express the relationships between the work cataloged and any other bibliographic entity of which it is a part. The sequence of codes starts with the smallest bibliographic unit and moves through larger aggregate units. Those character positions not used will be filled with blanks. The codes are as follows:

A = Analytical (includes *only* works not published separately but as a part of a larger bibliographic entity)

Chapter of a book
Journal article
Single volume of a multi-volume set

M = Monographic - publications which are non-serial because they are complete at the time they are issued or are to be issued in a known number of parts.

S = Serial - "publications issued in successive parts bearing numerical or chronological designations and intended to be continued indefinitely. Serials include periodicals, newspapers, annuals (reports, yearbooks, etc.), the journals, memoirs, proceedings, transactions, etc., of societies, and numbered monographic series."

Cf. *AA Rules*

C = Collective - made-up collections like manuscripts, pamphlets, etc., which are gathered together and cataloged as a single unit.

Examples:

M	S	ƀ

This is a monograph which is in a series

A	M	S

This is a chapter of a monograph which is in a series

A	S	ƀ

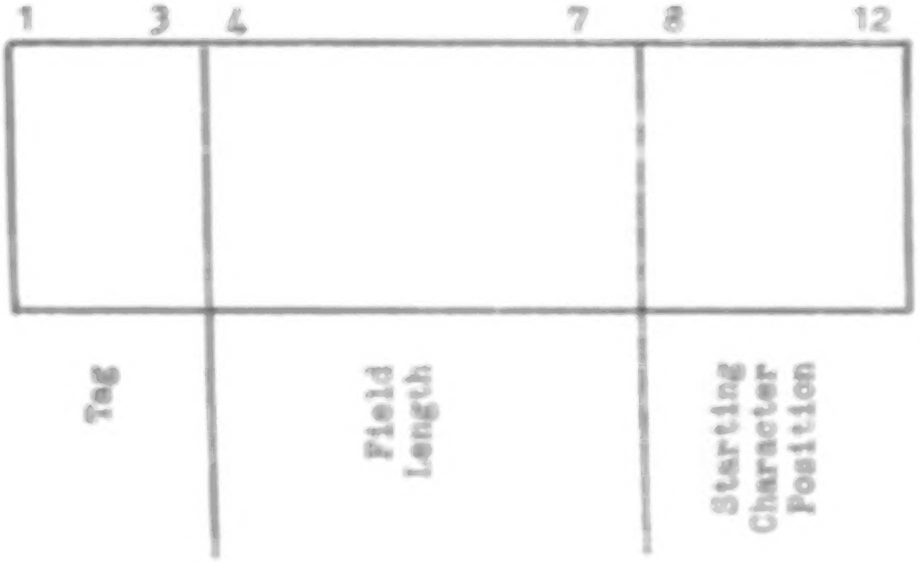
This is an article in a journal

INDICATOR COUNT 12

This field will contain a 2 indicating that each variable field will begin with a 2-character indicator.

Record Directory Contents Table

Element Number	Name of Record Directory Data Element	Number of Characters	Character Positions in Directory
1.	Tag	3	1-3
2.	Field Length	4	4-7
3.	Starting Character Position	5	8-12


1
3
4
7
8
12
Tag
Field Length
Starting Character Position

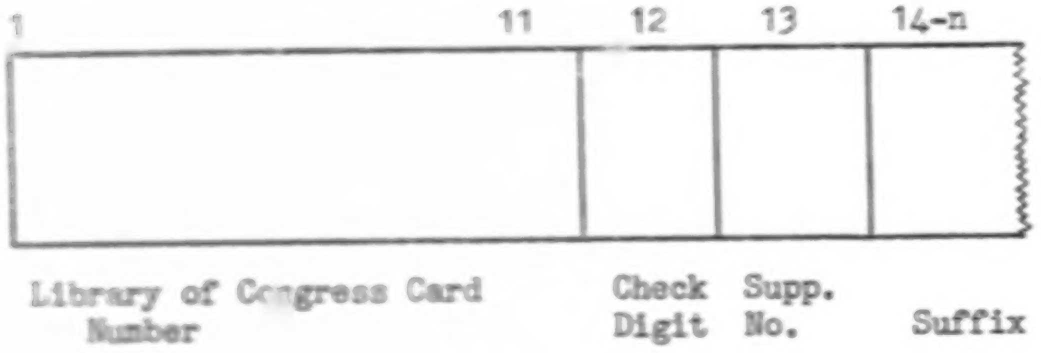
The above is a typical record directory entry which will be repeated for each variable data field in the record.

The tags in the record directory will be described in conjunction with the fields they identify.

Variable Control Number Contents Table

(Tag 000)*-The indicators will not be used with this field.

Element Number	Data Element	Number of Characters	Character Positions in Field**
1.	Library of Congress Card Number	11	1-11
2.	Library of Congress Card Number Check Digit	1	12
3.	Supplement Number	1	13
4.	Suffix	1 or more	14-n



---

*This is the variable length control number field which will be fixed length through character positions 1-13 on all monograph records distributed by the Library of Congress. Character positions 14-n will contain the LC card suffix when it is present. If it is not present the variable control number field will be only 13 characters long. A coded field identifying the source of cataloging data may be added later. Such a code needs more study.

**The character positions here represent the positions relative to the starting position of the Variable Control Number Field, i.e. the field whose tag is 000.

Variable Control Number Data Elements

Variable Control Number Data Element	Character Positions in Field
LIBRARY OF CONGRESS CARD NUMBER	1-11

The LC card number will be carried as an eleven-character fixed field which allows for three leading alphabetic and eight numeric characters. The alphabetic characters represent any prefix to the LC card number. The prefix is left justified with blank fill, and if no prefix is present, three blanks will appear before the numeric card number. The numeric part of the LC card number can be described as an eight-digit number; the first two digits are date, the last six digits an identification number. The date will always appear in character positions 4 and 5 of the LC card number field.

The identification number will be right justified with zero fill. Example:

Number on printed card	Number on magnetic tape
A66-011	Aƀƀ66000011
AC66-0111	ACƀ66000111

LIBRARY OF CONGRESS CARD NUMBER CHECK DIGIT	12

The purpose of this one-character numeric fixed

7

field will be to provide a check on the accuracy of the LC card number. The check digit is not yet in use by the Library of Congress, but the field is included here to accommodate planned implementation. In the interim, this field will carry a blank. A check digit is derived by performing a set of mathematical operations on the digits in the LC card number. The result of these operations is placed in the check digit field. The check digit is computed by machine and will permit an automatic check of the accuracy of the LC card number when it is used in computer processing applications. (See page 66 for a description of a check digit in the Standard Book Number.)

SUPPLEMENT NUMBER 13

Supplements, indexes, and other dashed-on entries that are related to but are not the same as the book in the main record are to be carried as independent records in the MARC distribution system. It is necessary, therefore, to provide a one-character numeric fixed field to identify the supplement because it will have the same LC card number as the original work. If the record does not represent a supplement, this field will be blank.

SUFFIX 14

The suffix to the LC card number will be recorded beginning in character 14. It will not be recorded in the fixed portion of the field because it is found so infrequently and because it does not affect the uniqueness of the LC card number. It will be possible to determine the presence and/or length of the suffix by subtracting the fixed 13 characters of the field from the total length of the field since the latter will be recorded in the directory.

Variable Fixed Field Contents Table

(Tag 001)--No indicators will be used with this field

Element Number	Name of Fixed Length Data Elements	Number of Characters	Character Position in Field*
1.	Number of Entries in Record Directory	3	1-3
2.	Date Entered on File	6	4-9
3.	Type of Publication Date Code	1	10
4.	Date 1	4	11-14
5.	Date 2	4	15-18
6.	Country of Publication Code	3	19-21
7.	Illustration Codes	4	22-25
8.	Intellectual Level Code	1	26
9.	Form of Reproduction Code	1	27
10.	Form of Content Codes	4	28-31
11.	Government Publication Indicator	1	32
12.	Conference or Meeting Indicator	1	33
13.	Festschrift Indicator	1	34
14.	Index Indicator	1	35
15.	Main Entry in Body of Entry Indicator	1	36
16.	Fiction Indicator	1	37
17.	Biography Indicator	1	38
18.	Language	3	39-41

---

*The character positions here represent the positions relative to the starting position of this Fixed Length Data Elements Field, i.e. the field whose tag is 001.

Variable Fixed Field Data Elements

Variable Fixed Field Data Element	Character Position in Field
NUMBER OF ENTRIES IN RECORD DIRECTORY	1-3

This is a three-character numeric fixed field which may be used for internal machine processing. It will give the number of 12-character entries found in the record directory for this particular record. Programmers may use this field when searching record directory entries to ascertain when they have reached the end of the record directory.

Variable Fixed Field Data Element	Character Position in Field
DATE ENTERED ON FILE	4-9

The six-character numeric fixed field will give the date the record was entered into the MARC system, thus giving an indication of the currency of the record. This date field will be divided into three subfields, each with two characters for the day, month, and year.

Example: |0|5|1|0|6|7| means October 5, 1967

A record corrected due to errors in keyboarding and editing will not have a change of date. However, a record changed as a result of a revision of the LC printed card will receive a new date. (See page 40 for a description of the use of the record status code for corrected and revised records.)

Variable Fixed Field Data Element (cont.)	Character Position in Field
TYPE OF PUBLICATION DATE CODE (one alphabetic character)	10
DATE 1 (four numeric characters)	11-14
DATE 2 (four numeric characters)	15-18

The contents of the two date fields will be determined by the character that appears in the type of publication date field as follows:

S = Date of publication consists of a known date or a probable date that can be represented by four digits. The date will be entered in the date 1 field and the date 2 field will contain blanks.

Imprint Date	Key	Date 1	Date 2
1966	S	1966	b̸b̸b̸b̸
c1966	S	1966	" "
1966 [i.e. 1965]	S	1965	" "
1965 [i.e. 1966]	S	1966	" "
Roma, anno XVIII [1939]	S	1939	" "
[1966 or 1967]	S	1966	" "
[1966?]	S	1966	" "
[ca. 1966]	S	1966	" "
1966/67	S	1966	" "

C = Date of publication consists of two dates, the actual date of publication and the copyright date. The date of publication will be entered in the date 1 field and the copyright date in the date 2 field.

Example:

Imprint Date	Key	Date 1	Date 2
1966 c1965	C	1966	1965

N = Date of publication not known. Date 1 field and date 2 field will contain blanks.

Example:

Imprint Date	Key	Date 1	Date 2
[n.d.]	N	b̸b̸b̸b̸	b̸b̸b̸b̸

R = The work has been previously published. The original date of publication will be entered in the date 2 field and the date of reproduction in the date 1 field.

Example:

Imprint date	Note	Key	Date 1	Date 2
1966 [c1950]	Published in Dublin (in 1741)	R	1966	1741
1966	First published in 1913	R	1966	1913
1966	Reprinted from Green Howard's Gazette	R	1966	b̸b̸b̸b̸

Date in Title Paragraph	Key	Date 1	Date 2
London, Macmillan, 1867 Dubuque, Iowa, W. C. Brown Reprint Library [1956?]	R	1956	1867
Reprinted from the 1817 ed., New York, Johnson Reprint Corp., 1965.	R	1965	1817

M = Date of publication consists of a multiple date with initial and terminal date known, or date of publication consists of a date with terminal date not yet known, i.e. open ended. If the terminal date is not yet known (open-ended) the date 2 field will be set to 9999. In the situation where a work has an initial and terminal date and also a date of previous publication, M will take precedence over R.

Example:

Imprint Date	Key	Date 1	Date 2
1966-67 [v. 1, 1967]	M	1966	1967
1966- (loose-leaf)	M	1966	9999

Example: (cont.)

Date in Title Paragraph	Key	Date 1	Date 2
Neudruck [der Ausg.] 1896. Wurzburg, A. Liebing (1966?-)	M	1966	9999

Q = Date of publication consists of a date in which one or more of the digits is missing, e.g. 194_ or 19__. The earliest possible date will be set by substituting missing digits with zeros and the latest possible dates with 9 (s). If a work is a reproduction but one or more of the digits in the imprint date is missing, Q will take precedence over R.

Example:

Imprint Date	Key	Date 1	Date 2
[196-]	Q	1960	1969
[19--]	Q	1900	1999
[196-?]	Q	1960	1969

Date in Title Paragraph	Key	Date 1	Date 2
London, Macmillan, 1867 Dubuque, Iowa, W. C. Brown Reprint Library [195-?]	Q	1950	1959

Variable Fixed Field Data Element (cont.) — Character Position in Field

COUNTRY OF PUBLICATION CODE — 19-21

A two-character alphabetic code, left justified, will be used for the country of publication. If the work is published in the United States, the first two characters of the field will contain a mnemonic code for the state where the work was published and the third character of this field will contain the character "U." When a work is published outside the United States, the third character will be blank.

Examples:	Code	
	P | K | b̸	means Pakistan
	C | A | U	means California

ILLUSTRATION CODES — 22-25

A four-character alphabetic fixed field has been reserved to show the presence of certain terms in the collation. The illustration statement subfield will be scanned for the set of terms listed below, and their respective codes will be set in the fixed field.

Up to four terms may be recorded. (In the Catalog Card Sample less than one percent of the cards had more than four terms.) The following list is in order of precedence, i.e. if more than four terms apply to the illustrative content of the work, the sequence in the list will determine which four are to be recorded in the fixed field. The codes are:

A = illustration
B = maps
C = portraits
D = charts
E = plans
F = plates
G = music
H = facsims
I = coats of arms
J = genealogical tables
K = forms

Other descriptive terms may be added to this list as they are encountered.

Examples:

Collation	Fixed Field
illus., maps (in pocket)	A B
illus., plates, ports.	A C F
illus., charts, facsim., music, ports.	A C D G

INTELLECTUAL LEVEL CODE 26

The Library of Congress will use this one-character alphabetic fixed field to show that the work cataloged is intended for juveniles. In this case, the field will contain the code "J"; otherwise, it will contain a blank. The Library of Congress will identify juvenile literature for coding by the following set of criteria:

1. The subdivision "Juvenile literature" used with a main subject heading.
2. An LC classification number for works of juvenile fiction, i.e. PZ5-PZ10.7
3. The letter "J" associated with the Dewey Decimal Classification Number.
4. The letter "E" used in place of a Dewey number on AC cards.

The AC prefix to the LC card number will not be used as a criterion since the Annotated Card Program includes young adult books and adult reference books in addition to children's books.

Other libraries may wish to use this field to identify and code further categories of intellectual level.

FORM OF REPRODUCTION CODE 27

If the work has been reproduced photographically or by other means in a size too small to be read by the unaided eye, this field will contain a code indicating the type of reproduction. If the work has over-size print, this will be indicated.

A = Microfilm
B = Microfiche
C = Microopaque
D = Large-print

FORM OF CONTENT CODES 28-31

Certain types of material used frequently for reference purposes will be specified by a one-character alphabetic code. Since some works embody several types of materials, as many as four may be specified in the fixed field. This information will be taken from the title statement, the subject headings, or the notes. In the unlikely eventuality that more than four types are present, the sequence of the following list will determine which four are to be recorded.

A = Bibliographies
B = Catalogs
C = Indexes
D = Abstracts
E = Dictionaries
F = Encyclopedias
G = Directories
H = Yearbooks
I = Statistical compilations
J = Handbooks

GOVERNMENT PUBLICATION INDICATOR 32

If the work is a government publication, this field will contain a 1. Otherwise, it will contain a 0 (zero).

Variable Fixed Field Data Element (cont.)	Character Position in Field
CONFERENCE PUBLICATION INDICATOR If the work contains the proceedings, reports, or summaries of a conference, meeting, or symposium, this field will contain a 1. Otherwise, it will contain a 0 (zero).	33
FESTSCHRIFT INDICATOR If the work is a festschrift, this field will contain a 1. Otherwise, it will contain a 0 (zero).	34
INDEX INDICATOR If the work contains an index to its own contents, this field will contain a 1. Otherwise, it will contain a 0 (zero).	35
MAIN ENTRY IN BODY OF ENTRY INDICATOR In some cases in a catalog record, the name used as main entry may also be found in the body of the entry as part of the title, author statement, or imprint. In some cases, the form of name is the same, in others it is quite different. When the main entry is also found in the body of the entry in any form, this field will contain a 1. Otherwise, it will contain a 0 (zero).	36

Variable Fixed Field Data Element (cont.) — Character Position in Field

Examples:

Main entry—Constant de Rebecque,
Henri Benjamin, 1767-1830

Title with author statement—Adolphe [by]
Benjamin Constant
[Main entry is included in author statement]

Main entry—Aristoteles

Title—Aristotle on the art of poetry
[Main entry is included in title]

FICTION INDICATOR — 37

If the work is fiction, this field will contain a 1. Otherwise, it will contain a 0 (zero).

BIOGRAPHY INDICATOR — 38

If the work is a biography or autobiography, this field will contain a 1. Otherwise, it will contain a 0 (zero).

LANGUAGE — 39-41

If the work is in a single language and is not a translation, this field will contain a three character code for the language. If the work is multilingual or a translation, the language will be recorded in variable field $\boxed{0}\boxed{0}\boxed{3}$ and the fixed field will contain blanks.

Variable Fields Contents Table

Tag	Variable Field Data Element
002	LEGEND EXTENSION
003	LANGUAGES
	CONTROL NUMBERS
010	LC CARD NUMBER
011	NATIONAL BIBLIOGRAPHY NUMBER
012	STANDARD BOOK NUMBER
013	PL 480 NUMBER
014	SEARCH CODE
019	LOCAL SYSTEM NUMBER
	KNOWLEDGE NUMBERS
020	BNB CLASSIFICATION NUMBER
030	DEWEY DECIMAL CLASSIFICATION NUMBER
050	LC CALL NUMBER
051	COPY STATEMENT
060	NLM CALL NUMBER
070	NAL CALL NUMBER
071	NAL SUBJECT CATEGORY NUMBER
080	UDC NUMBER
090	LOCAL CALL NUMBER
	MAIN ENTRY
100	PERSONAL NAME
108*	TITLE
110	CORPORATE NAME
111	CONFERENCE OR MEETING
118*	TITLE
120	CORPORATE NAME WITH FORM SUBHEADING
128*	TITLE
130	UNIFORM TITLE HEADING
138*	TITLE
	SUPPLIED TITLES
200	UNIFORM TITLE
210	ROMANIZED TITLE
220	TRANSLATED TITLE
	TITLE PARAGRAPH
240	TITLE
250	EDITION STATEMENT
	IMPRINT
260	PLACE
261	PUBLISHER
262	DATE(s)
300	COLLATION
350	BIBLIOGRAPHIC PRICE
360	CONVERTED PRICE
	SERIES NOTES
400	PERSONAL NAME (TRACED THE SAME)
408	TITLE
410	CORPORATE NAME (TRACED THE SAME)
411	CONFERENCE (TRACED THE SAME)
418	TITLE
440	TITLE (TRACED THE SAME)
490	SERIES UNTRACED OR TRACED DIFFERENTLY

Tag	Variable Field Data Element
	BIBLIOGRAPHIC NOTES
500	BIBLIOGRAPHY NOTE
510	DISSERTATION NOTE
520	CONTENTS NOTE (FORMATTED)
530	"BOUND WITH" NOTE
540	"LIMITED USE" NOTE
550	GENERAL NOTES (ALL OTHERS)
560	ABSTRACT
	SUBJECT ADDED ENTRY
600	PERSONAL NAME
608	TITLE
610	CORPORATE NAME
611	CONFERENCE OR MEETING
618	TITLE
620	CORPORATE NAME WITH FORM SUBHEADING
628	TITLE
630	UNIFORM TITLE HEADING
638*	TITLE
650	TOPICAL
651	GEOGRAPHIC NAMES
652	POLITICAL JURISDICTION ALONE OR WITH SUBJECT SUBDIVISIONS
653	PROPER NAMES NOT CAPABLE OF AUTHORSHIP
655	GENERAL SUBDIVISIONS (OTHER THAN PERIOD AND PLACE)
656	PERIOD SUBDIVISION
657	PLACE SUBDIVISION
660	NLM SUBJECT HEADINGS (MESH)
670	NAL AGRICULTURAL/BIOLOGICAL VOCABULARY
690	LOCAL SUBJECT HEADING SYSTEMS
	OTHER ADDED ENTRIES
700	PERSONAL NAME
708	TITLE
710	CORPORATE NAME
711	CONFERENCE OR MEETING
718	TITLE
720	CORPORATE NAME WITH FORM SUBHEADING
728	TITLE
730	UNIFORM TITLE HEADING
738*	TITLE
740	TITLE TRACED DIFFERENTLY
753	PROPER NAMES NOT CAPABLE OF AUTHORSHIP
	SERIES ADDED ENTRIES
800	PERSONAL NAME
808	TITLE
810	CORPORATE NAME
811	CONFERENCE OR MEETING
818	TITLE
840	TITLE
900	BLOCK OF 100 NUMBERS FOR LOCAL USE

*Rare but occasionally found in old cataloging

LEGEND EXTENSION (Tag 002)

This field may be used to include additional information about the legend or record directory.* The Library of Congress will not use this field at this time.

LANGUAGES (Tag 003)

This field will only be used when the work is multilingual or a translation. If the work is in a single language, the language will be recorded in the fixed field and there will be no variable field 003 . For multilingual works, the languages of the text will be recorded in coded form.** in order of their predominance in the text. If no language is predominant, they will be recorded in alphabetical order. If the work includes summaries in languages other than that of the text, these languages will be recorded in alphabetical order following the languages of the text. A delimiter will separate the two groups, allowing the user to mask out summaries if desired.

A three-character code will be assigned to each language. An indicator will be associated with the languages tag when the work is a translation.

Multi-Language	= 0
Translation	= 1

When a work has been translated, the languages will be recorded in the following order:

(1) Language of work

(2) Language from which it was translated

---

*For information on how this field may be used, see Appendix X.

**The MARC I language codes are currently being re-examined for accuracy and completeness.

(3) Original language

In most cases, (2) and (3) will be the same and the language will only be recorded in (2).

Examples: |0|0|2|0| ENG$FREGERRUS

Tag Indicator

Where the text is in English with French, German and and Russian summaries

|0|0|2|1| ENGFRE

Tag Indicator

Where a work in English is a translation from the French

|0|0|2|1| ENGGERSWE

Tag Indicator

Where a work in English is a translation from a German text which was originally published in Swedish.

NUMBERS (Tag |0| | |)

All numbers, such as call number, card number, etc., associated with the record will have a 0 (zero) as the first character of the tag. Indicators to be used with the number fields are described in conjunction with the fields. Only those indicators are described which have been specified up to this time.

A. Control Numbers

1. LC Card Number (Tag |0|1|0| |)

This field is reserved for those libraries that wish to carry the Library of Congress card number in the record along with their own control number. The Library of Congress will carry the LC card number in the Variable Control Number Field.

2. National Bibliography Number (Tag 011)

   This is a control number similar to the LC card number. When the Library of Congress derives its cataloging information from an entry in a foreign national bibliography, the number of the entry is included on the cataloging record. If there is more than one national bibliography number, they will be separated by delimiters.

3. Standard Book Number (Tag 012)

   This number is a device for bibliographic control which is to be implemented by the American and British book trade. The introduction of electronic data processing techniques in the publishing industry makes identification by number more efficient than identification by other more traditional bibliographic elements. A computer file is more readily accessible if arranged by number than a combination of alphabetic characters. The standard book numbering scheme intends to coordinate all the various numbering systems already existing in the publishing industry in order to give each title published a unique and similarly structured number by which it may be ordered.

As presently planned in England,* this number will be printed on the verso of the title page of each book. The number has nine digits which are separated into three functional parts: (1) a publisher's prefix, (2) the title number, and (3) a check digit. The publisher's prefix can be from two to seven digits in length and is allocated to publishers according to their current rate of title output. The largest publishers will have the shortest prefixes. The second part of the number identifies the particular title and expands the number to eight digits. For example, the publisher with a two-digit publisher's prefix is assigned a six-digit title number, i.e. 000,001—999,999, and the publisher with a seven-digit prefix is assigned a one-digit title number, i.e. 1-9. This is for a computer validity check and guards against a wrong number being accepted and, thus, a wrong book processed. The check digit system, i.e. modulus 11, sometimes requires a check digit of "10." Since it is desirable to stay within the limitations of nine digits, it is necessary to carry the Roman numeral "X" in the check digit position for "10."

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*Standard Book Numbering Agency, Standard Book Numbering (London, 1967).

The standard book number will be printed in the book in the following style: The prefix abbreviation "SBN" followed by a colon, space, the publisher's prefix, space, title number, space, check digit. A sample follows:

SBN: 949999 00 8

In a computer format the "SBN:" abbreviation and the spaces will be suppressed so that the number occupies no more than 9 character positions. With spaces removed it could be impossible to tell which part of the number is the publisher's prefix and which part is the title number. This problem has been solved by assigning publisher prefixes only within a certain range of numbers for a given number of digits. For example, three-digit publisher prefixes are assigned between the numbers 200 to 699; four-digit prefixes are assigned between 7000 to 8499. The length of the publisher prefixes can be determined by looking at the first two digits of the standard book number. This method of allocating publisher prefixes also avoids the possibility of two publishers assigning the same standard book number to two different books.

The plan outlined above, however, is not completely fixed and is subject to some possible modifications.

Because the number as presently structured may be difficult to handle in large data banks, it is possible that a two-digit year code, i.e. imprint date, might be added to the number, similar to the system used with the LC card number. In addition, because the SBN system may be adopted in other countries, there is a possibility that a two-digit country of imprint code will be assigned. This will make the number 13 digits long. At the time of writing this report, no firm decisions have been made on these two points.

The publishing industry in the United States is planning to adopt essentially the British scheme. It has been determined that publisher's prefix numbers can be assigned from the same set of numbers used by the British. Library of Congress cataloging will include the standard book number as a descriptive bibliographic data element on its printed cards. The MARC format will carry this number as a variable field. However, because the data will be fixed in length, it can be considered a fixed field for programming purposes.

At the time this report was written, the number codes for publisher identification were not yet available. It is expected that these will soon be distributed through book trade sources. The development of the standard book number made the inclusion of a separate publisher's code unnecessary in the MARC format.

4. PL 480 Number (Tag 013)

All material acquired by the Library of Congress for distribution to other libraries under the PL 480 Program is assigned a PL 480 number.

Example: PL 480:UAR-8425

5. Search Code (Tag 014)

This field has been reserved for a feature that may have great utility in the future. The premise is that a machine-readable bibliographic record needs some method of rapid identification when the control number is not known. It is hoped that by combining a set number of characters from certain critical data fields an alphanumeric code can be derived which identifies the work with statistically acceptable accuracy, e.g. ten characters from the title, five from the main entry, two from date, three from pagination, etc. Searching this coded field would be more efficient than searching through several variable-length fields. If the control number for a particular work was not available, the search code could be derived simply from the work in hand and then used to search the file for its cataloging record. The actual structure of this code needs further research.* For the present the Library of Congress MARC records will not use this field.

6. Local System Number (Tag $\boxed{0|1|9}$)

   This field allows the local institution to identify and use its own control number in association with any MARC record. Many libraries may choose to organize their machine-readable bibliographic files by an accession number or some other kind of control number rather than the LC card number. This field can also be used to identify any original cataloging by the local institution.

B. Classification Numbers

1. BNB Classification Number (Tag $\boxed{0|2|0}$)

   This field is reserved for the British National Bibliography classification number. The Library of Congress will not supply this number at the present time.

2. Dewey Decimal Classification Number (Tag $\boxed{0|3|0}$)

   This field will contain the complete Dewey Decimal Classification Number. Some Dewey numbers are prefixed by a "j." When such a number appears in a MARC record, the "j" will follow the Dewey number separated by two spaces and will be enclosed in parentheses. The "j" is used for juvenile titles, and the numbers have been assigned from the 9th abridged edition of the Dewey Classification. Those cards in the Annotated Card program may have an "E" for easy book and "Fic" for fiction provided in the place of the Dewey number when appropriate.

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*See Appendix VI for a description of an experimental code presently being input on bibliographic records at the University of Chicago.

Since early 1967 the Dewey number has in many instances been printed in up to three segments. The purpose of this segmenting is to allow libraries to cut long numbers without assigning professional talent to the task. On the Library of Congress printed card the segmenting will be shown by the prime mark. In the MARC record a slash will be substituted to indicate the number segment because the prime mark will not be included in the MARC character set. It is anticipated that users will suppress this character in any print programs. For further detail on segmenting the Dewey number see Library of Congress Cataloging Service Bulletin No. 78 (December, 1966). If there is more than one Dewey number, they will be separated by delimiters.

3. Library of Congress Call Number (Tag 050)
This field will contain a complete Library of Congress call number or a Library of Congress class number only,

or it will be blank. When a complete call number is given the class number portion will be separated from the book number portion by a delimiter.

Example: JK609$.M2

This will be done manually since in the Library of Congress Classification Scheme the first cutter number is not necessarily the book number.

Example: RT81.U6$N29

The presence of a class number only indicates that the Library of Congress cataloged the publication but has not added it to its collections and does not expect to do so. On the standard Library of Congress printed card such class numbers are enclosed within brackets. On a MARC record brackets will not be used for this purpose. An indicator will show whether the book has been added to the Library's collections as follows:

Book is in LC = 0

Book is not in LC = 1

The absence of a Library of Congress call number or class number indicates that the publication has been assigned to the Law Library of the Library of Congress.

Under the present system, the Library assigns only one call number to each book and this number serves not only as a subject classification number but also as a shelf location number. If at a future time, the Library should supply alternate class numbers to provide additional subject access points, these numbers will be listed after the primary call number and will be separated by delimiters.

4. Copy, Issue, Offprint Statement (Tag $\boxed{0|5|1}$)
This field will include all copies, issues, offprints, detached copies, etc. which are added to the catalog record. (It will not include supplements, indexes, etc. which are related to, but are not the same as, the work in the main record. These will be treated as separate records. See page 48).

This field will be divided into two subfields. The first subfield will contain the LC call number for the particular copy or issue, delimited in the same way as the main call number. The second subfield will contain the rest of the statement. A delimiter will separate the two fields. When no call number is given, its absence will be shown by two delimiters at the beginning of the field.

Examples:

$\boxed{0|5|1}$ RS310$.W59$Offprint. Cover dated 1946.

$\boxed{0|5|1}$ QA152$.A247$Another issue. 104 p.
(p. 101-104 advertising matter)

Examples (cont.):

051 JA38$.N54$Copy 2. Not numbered.
Extra illustrated.

051 $$Another issue. Calcutta, 1964.

This tag may be repeated as often as necessary.

5. National Library of Medicine Call Number (Tag 060)
This field will contain a complete NLM call number, an NLM class number only, or it will be blank. When a complete call number is given, the class number portion will be separated from the book number portion by a delimiter. NLM presently assigns only one call number to each book; however, it plans to supply alternate call numbers or class numbers in the future to provide additional subject access points. If alternate class numbers are supplied, these numbers will be listed after the primary call number and will be separated by delimiters.

6. National Agricultural Library Call Number (Tag 070).
This field will contain the complete NAL call number, which serves as a shelf location number. The class number portion of the call number will be separated from the book number portion by a delimiter. This number will be included only when supplied by the National Agricultural Library.

Two classification schemes are represented in NAL call numbers. Through 1965, the collection was classified with the Scheme of Classification for the United States Department of Agriculture Library. In 1966, NAL adopted the Library of Congress classification system, but the existing collection was not reclassified. Therefore, entries for new titles cataloged beginning 1966 bear the LC classification; but entries for serial analytics and for changed author or title entries for previously cataloged serials retain the original call number.

Publications issued by the United States Department of Agriculture were for many years classed in the number "1" and its subdivisions. From late 1953 through 1965, these titles were distinguished by assigning an "A" before the classification number. Since 1966, an "a" has been prefixed to the LC classification number in the call numbers for Department publications.

7. National Agricultural Library Subject Category Number (Tag | 0 | 7 | 1 |)

This field will contain the NAL subject category number. This number represents the broad subject area to which the publication belongs, such as Animal Science or Forestry. It does not serve as a shelf location number. The category numbers are taken from the <u>Agricultural/Biological Subject Category List</u>, developed by the NAL Agricultural Vocabulary Project. This number will be included only when supplied by the National Agricultural Library.

8. Universal Decimal Classification Number (Tag 080)

This field is reserved for the UDC number. The Library of Congress will not supply this number at the present time.

9. Local Call Number (Tag 090)

This information has been included in the communications format because it is considered important for future interlibrary communications. For example, in regional or university systems the holdings of other libraries may well be very useful information, especially if union catalogs are being developed. This field is made up of three subfields divided by delimiters as follows:

```
090 Call number$Holding collection code$
          Number of copies
```

The use of all the subfields is strictly optional in the communications format and depends on the local situation. The subfields are defined as follows:

a. Call Number. This number will be entered in accordance with the practice of the local library system. It may be repeated for as many different call numbers and/or holding collections as there are in the local library system.

b. Holding Collection Code. This code will be developed by the local library system to identify the various collections or branches which make up the system, e.g. Rare Book Room, Geology Library, etc. The codes will apply only to the local library. This feature is considered desirable because if interlibrary loan requests in a cooperating group of libraries can be addressed to the specific holding collection, much time could be saved in processing the request.

c. Number of Copies. In association with each call number and holding collection, a library may wish to record the number of copies to be found on that particular shelf location.

Some sample entries in this field, all of which could apply to the same catalog record, would appear as follows:

```
PE1111.K62$MRR$2
PN35.H4$PRR$1
PN35.H4$RBR$10
PA6279.A4A5$HUM$1
PR1901.A3no.28$HUM$1
```

This tag may be repeated as often as necessary. Indicators may be used with this field if desired to provide local information.

MAIN ENTRY (Tag 1)

A. Tags. This field will be defined by a three-digit tag. The first digit of the tag will be a "1." The second and third digit of the tag, and the format of the data in the field will be determined by the type of heading used as a main entry (see section on headings, page 31).

Examples: 100 Smith, Randolph Arthur.

110 California.$University.$College of Environmental Design.

The absence of a main entry tag will indicate that the work is entered under title.

B. Indicators. The first indicator used with the main entry field will describe two levels of information. The first level will indicate the type of name and will be used only with personal name and corporate name headings.

Personal name	Corporate name
Forename = 0	Surname (inverted) = 0
Single Surname = 1	Place or, Place + Name = 1
Multiple Surname = 2	Name (direct order)= 2
Name of Family = 3	

The second level will be used with all kinds of main entries and will indicate whether the main entry is also the subject of the work. This will be shown as follows:

Main entry is not subject = 0

Main entry is subject = 1

Both levels of information will be shown in the same indicator position by a stacked code.

| 1 | 0 | 0 | Personal name

Form of Name	Main entry is not subject	Main entry is subject
Forename	0	4
Single Surname	1	5
Multiple Surname	2	6
Name of Family	3	7

| 1 | 1 | 0 | Corporate name
| 1 | 1 | 1 |

Form of Name	Main entry is not subject	Main entry is subject
Surname (inverted)	0	4
Place, or Place + Name	1	5
Name (direct order)	2	6

Example: | 1 | 1 | 0 | 5 | Main entry—corporate name entered under place. Main entry is also subject.

Tag Indicator

TITLES

A. Uniform Title (Tag $\boxed{2|0|0}$)

This field includes both uniform titles printed on LC cards and those which the Library types on printed cards for use in its own catalogs.* An indicator will be used to show whether the uniform title is found on the LC printed card as follows:

Not printed on LC cards = 0
Printed on LC cards = 1

Example: $\underbrace{\boxed{2|0|0}}_{\text{Tag}}\underbrace{\boxed{0}}_{\text{Indicator}}$ De bello Gallico. French.

The delimiter will not be used with this field.

B. Romanized Title (Tag $\boxed{2|1|0}$)

This field contains the Romanized form of the title when this title appears in a non-Roman alphabet. An indicator with this field may be used to generate a title added entry upon print-out.

No title added entry = 0
Title added entry = 1

This field will not be used by the Library of Congress until MARC is extended to cover materials in non-Roman alphabets. The delimiter will not be used with this field.

---

*For a more complete description of the Library's policy on Uniform Titles, see Appendix VII.

C. Translated Title (Tag 220)

The Library of Congress does not translate titles as part of its cataloging process. This field will be reserved for the use of other libraries.

D. Title Statement (Tag 240)

This field will contain the title and all information up to but not including the edition statement. A full title is defined as the distinguishing name of any work and includes the subtitle and alternate title when present. The short title is that part of the title up to the first logical break—usually a punctuation mark. The remainder of the title is that part of the full title (including subtitles, alternative titles, and titles in other languages) after the short title. The remainder of the title page transcription generally includes statements of authorship, illustration, etc.

The title statement will be divided into three subfields divided by delimiters, according to the following pattern:

240 Short title$Remainder of title$Remainder of title page transcription

If any subfield is not present a delimiter will be included to show its absence unless the delimiter would fall at the end of the field.

Examples: 240 Sold for silver;$an autobiography$
by Janet Lim.

240 The Anglo-Korean dictionary.$$Begun
by J. Wade; rev., enl., and
completed by Mrs. J. P. Binney.

240 Bird hybrids,$a check-list.

An indicator will be used with 240 to show whether a title added entry is in exactly the form recorded in the short title portion of the title statement as follows:

No title added entry in this form = 0

Title added entry to be traced in this form = 1

For titles to be traced in a different form, see tag 740, page 100.

EDITION STATEMENT AND REMAINDER OF TITLE PAGE TRANSCRIPTION (Tag 250)

This field will be divided into two subfields separated by a delimiter. The first subfield will contain the edition statement proper. For the purposes of this format the edition statement will include all the descriptive words and numbers describing the edition up through the word "edition" or its equivalent, and any terms such as "revised" or "enlarged" which immediately follow it. The remainder of the information included in the field up to, but not including, the imprint, will be included in the second subfield. The delimiter will be omitted when the second subfield is not present.

Examples:	250	2d ed., rev. and enl.$by W. H. Chaloner
	250	[1st English-language ed.]
	250	[1st ed. in the U. S. A.]
	250	New rev. and enl. ed.$With appendix: The coins and banknotes of the British Mandatory Government of Palestine.
	250	4. Aufl.$Mit 55 Abbildungen. (Übers. aus dem Russischen von Hardwin Jungclaussen)

The indicator will not be used with this field.

IMPRINT (Tag $\boxed{2|6|\;}$)

The first two digits of the imprint tag will be "26." The third character will define the data element in the imprint as follows:

$\boxed{2|6|0}$ Place
$\boxed{2|6|1}$ Publisher
$\boxed{2|6|2}$ Date(s)

In the Catalog Card Sample over 90 per cent of the occurrences of imprint fell into two patterns:

Place—Publisher—Date(s)	e.g. New York, Grove Press, 1965.
Place—Date(s)	e.g. Washington, 1954.

However, the AA Rules provide that "if a city in the United States, with or without an American publisher, is named in a secondary position in a work containing a foreign imprint, it is included in addition to the foreign imprint."

Example: $\boxed{2|6|0}$ Paris, $\boxed{2|6|1}$ Gauthier-Villars,
$\boxed{2|6|0}$ Chicago, $\boxed{2|6|1}$ University of
Chicago Press, $\boxed{2|6|2}$ 1965.

If the publisher's name is the same in both countries, the imprint is:

$\boxed{2|6|0}$ London, $\boxed{2|6|0}$ New York, $\boxed{2|6|1}$ Macmillan,
$\boxed{2|6|2}$ 1965, c1964.

Another rule provides for including the publisher and his distributing agent in the imprint when both are named. Using hypothetical examples, the tagged imprint would appear under this rule as follows:

> $\boxed{260}$ Chicago, $\boxed{261}$ Printed by University of Chicago for the Museum of Natural History, $\boxed{262}$ 1966.
>
> $\boxed{260}$ New York, $\boxed{261}$ Published by Harcourt, Brace, for A. M. Kelley, bookseller, $\boxed{262}$ 1964.

No attempt will be made to separately tag publisher and agent. For the purposes of this format all variations suggested above will be considered part of the single publisher field.

In many cases, there is more than one date expressed in the imprint. Because dates have been included in the fixed fields, the dates in the variable field will be tagged only once.

> Example: $\boxed{262}$ 1965, c1964

The publisher is sometimes omitted from the imprint because it is the same as the main entry. When this situation occurs, a publisher field will be tagged even though the data is not present. The data field will contain only an indicator set to 1 showing that the name of the publisher is to be found in the main entry.

Example: $\boxed{2|6|0}$ Washington, $\underbrace{\boxed{2|6|1}}_{\text{Tag}}\underbrace{\boxed{1}}_{\text{Indicator}}$ $\boxed{2|6|2}$ 1967.

No indicators will be used with tags 260 and 262. No delimiters will appear with this field in the machine record.

COLLATION (Tag 300)

The collation will be divided into four subfields containing pagination or volume, illustrations, height, and thickness. These subfields will be separated by delimiters as follows:

300 Pagination or volumes$Illustration statement$
Height$Thickness

If a subfield is not present, a delimiter will be included to show its absence. The Library of Congress will not record thickness at present. The indicator will not be used with this field.

PRICE (Tags 350 and 360)

A. Bibliographic Price (Tag 350) is the list price at the time of publication expressed in the currency of the country of publication. The Library of Congress will supply this price only when the information is readily available.

B. Converted Price (Tag 360) is the price derived by converting local currency into U.S. dollars. The Library of Congress will not supply a converted price. This field is reserved for use by other libraries.

No indicators or delimiters will be used with these fields.

SERIES NOTES (Tag $\boxed{4}\boxed{\ }\boxed{\ }$)

All fields containing series notes will be defined by a three-digit tag. The first digit of the tag will be a "4." Series notes may be repeated as often as necessary and in any order.

A. Author/Title Series Notes—where series added entry is traced in the same form. (Tags $\boxed{4}\boxed{0}\boxed{0}$ $\boxed{4}\boxed{1}\boxed{0}$ $\boxed{4}\boxed{1}\boxed{1}$)

1. Tags. The second and third digits of this tag will be derived according to the general rules for headings, page 31. The title portion will have its own tag. The first two characters of the tag will be the same as those used to define the heading. The third character will be an "8." When the series is numbered, a delimiter will separate the number from the rest of the series.

2. Indicators.

   a. Indicators for the form of name used in the series note will be assigned according to the general rules for indicators used with headings, page 31.

   b. An indicator will be used when the author portion of the series is represented by a pronoun referring to the main entry.

Example: Main entry—New York University. C. J. Devine
Institute of Finance
Series note—(Its Bulletin, no. 26)
will produce the following series note field:

4106 (Its 418 Bulletin,$no. 26)
Tag Indicator

c. These two indicators will appear in the record in the first indicator position by way of a stacked code.

400 Personal name/ title series

Type of Name	Author is not Main Entry	Author is Main Entry
Forename	0	4
Single Surname	1	5
Multiple Surname	2	6
Name of Family*	3	7

---

*Although it is not anticipated that the name of a family will be used as the author portion of a series note, it is included here for consistency.

410
411 Corporate name/title series

Type of Name	Author is not Main Entry	Author is Main Entry
Surname (inverted)	0	4
Place, or Place + Name	1	5
Name (direct order)	2	6

Example: $\underbrace{410}_{\text{Tag}}\underbrace{2}_{\text{Indicator}}$ (Society for Applied Anthropology

418 Monograph$no. 70)

3. These tags may be used to generate a series added entry when the record is printed.

B. Title Series Notes—where series added entry is traced in the same form. (Tag 440)

When the series is numbered, a delimiter will separate the number from the rest of the series. The indicator will not be used with this tag. This tag may be used to generate a series added entry when the record is printed.

Example: 440 (Southwestern studies,$v. 1, no. 4)

C. Series Not Traced or Traced Differently (Tag 4 9 0)

This field will include series which are not traced or are traced in a form different from that in the series note.

An indicator will show if the series is traced as follows:

Series Is Not Traced = 0

Series Is Traced in Different Form = 1

This kind of series will not be formatted or delimited.

Example: $\boxed{4\,9\,0\,1}$ (Schriften des Vereins fur Socialpolitik, n.F., Bd. 28)

BIBLIOGRAPHIC NOTES (Tag 5).

The first digit of a note tag will be a "5." The second digit will define the type of note. The third digit will generally be a 0 (zero). Types of notes will be tagged as follows:

500	Bibliography note
510	Dissertation note
520	Contents note (Formatted)*
530	"Bound with" note
540	"Limited use" note
550	General notes (all others)
560	Abstracts

Tags for notes may be repeated as often as necessary and in any order. No indicators or delimiters will be used with these fields at present.

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*Some contents notes appear [illegible] in formatted form after the words "Contents" or "Partial Contents." These notes contain a great deal of information to which there is no ready access. Some users of machine systems would like each element in a contents note to be tagged and formatted so that a user might be able to search and retrieve or print out analytical listings of the authors and titles contained therein. There are many problems involved in tagging these elements. The primary one appears to be the fact that in most cases the author is given in direct form, i.e. W. H. Smith, rather than inverted form, i.e. Smith, W. H. It is possible that an algorithm might be written to invert these names in the machine. Such names as E. Simoes de Paula and A. S. de Bustamente y Sirven add to the complexity of this task. Other problems concern such matters as whether items in contents notes should be delimited or tagged, and if tagged, where a directory of these tags should be located. For the time

SUBJECT ADDED ENTRIES (Tag 6).

The first digit of the tag will be a "6." The second and third digits will define the type of heading or the type of subject heading system. Tags may be repeated as often as necessary and in any order.

A. LC Subject Headings. At the Library of Congress, nine categories of main subject headings and three categories of subject heading subdivisions have been defined. The first four which are common to all types of entries will be tagged, formatted, and delimited according to the general rules for headings, page 31.

1. Personal Names (Tag 600). This category includes:
   a. Names of actual persons, capable of authorship.
   b. Names of families, e.g. McAllister Family.
   c. Titles of books entered under personal author,
      e.g. Gide, Andre Paul Guillaume, 1869-1951.
      Prometheus misbound.
   d. Any of the above with subject subdivisions.

The indicators used with personal names will be as follows:

Forename = 0

Single Surname = 1

---

being, the MARC II format will not include tags or delimiters for the elements within contents notes. Formatted contents notes will be tagged 520. Informal contents notes will be tagged with the general 550. The formatted contents note is tagged separately to allow other libraries to locate this field easily if they wish to generate an analytical record.

Multiple Surname = 2

Name of Family = 3

2. Corporate Names (Tags 610 and 611). This category includes:

   a. Names of organized bodies, established under their own names or under the political jurisdiction in which they are located or of which they are a part. (The name of a political jurisdiction standing alone will be tagged 652. See Category 7.)

   b. Entities such as ships which are sometimes used as author entries.

   c. Titles of books entered under corporate author.

   d. Any of the above with subject subdivisions.

The indicators used with corporate names will be as follows:

Surname (inverted) = 0

Place, or Place + Name = 1

Name (direct order) = 2

3. Corporate Names with Form Subheadings (Tag 620). No indicators will be used with this field.

4. Uniform Title Headings (Tag 630). This category will also include all titles of works entered under title such as "The Atlantic." No indicators or delimiters will be used with this field.

5. Topical Subject Headings (Tag $\boxed{6|5|0}$). This category includes general terms such as "dogs" or "chemistry" of the type listed in the LC list of subject headings. It also includes systematic names of families, genera, species in botany and zoology, and chemical compounds. No indicators or delimiters will be used with this field.

6. Geographic Names (Tag $\boxed{6|5|1}$). This category includes:

   a. Natural features, e.g. bays, capes, rivers, mountains, deserts, etc.

   b. Geographical regions, e.g. names of continents, land masses, etc.

   c. Archeological sites.

   d. Parks, etc.

   No indicators or delimiters will be used with this field.

7. Political Jurisdictions--alone or subdivided by subject terms. (Tag $\boxed{6|5|2}$).

   (Political jurisdictions subdivided by names of organized bodies will be considered Corporate Names, Category 2.)

   No indicators or delimiters will be used with this field.

8. Proper Names not Capable of Authorship (Tag $\boxed{6|5|3}$). This category includes:

a. Structures, e.g. bridges, canals, etc.

b. Names of animals, e.g. Lassie, etc.

c. Mythological names

d. Names of events and holidays, e.g. Battle of Tannenberg, etc.

No indicators or delimiters will be used with this field.

9. Each subject subdivision will have its own tag as follows:

655	Subdivisions other than period or place
656	Period Subdivision
657	Place Subdivision

Examples:

650 Art-- 655 Hist.-- 656 19th century.

650 Zoology-- 657 Cocos Island

6001 Sheridan, Philip Henry,$$1831-1888-- 655 Juvenile fiction

652 Gt. Brit.-- 655 Hist.-- 656 Puritan

1660-- 655 Sources

No indicators or delimiters will be used with the subdivision fields.

B. NLM-MESH (Medical Subject Headings) Tag numbers 660 - 669 will be reserved for the use of NLM subject headings. Tag 660 will be used for the main headings, tag 661 for topical subheadings, 662 for geographic subheadings, 663 for time period subheadings, and 664 for form subheadings. The Library of Congress will include these only when they are supplied by NLM. These tags may be repeated as often as necessary and in any order.

C. NAL--Agricultural/Biological Vocabulary (Tag 670) This field will be reserved for subject headings used by the National Agricultural Library. This tag may be broken down to indicate different types of subjects by NAL. The Library of Congress will include these only when they are supplied by NAL. This tag may be repeated as often as necessary.

D. Local Subject Heading Systems (Tag 690). This field will be reserved for use by other libraries.

ADDED ENTRIES (Other than Subject or Series) (Tag | 7 | | |).

A. Tags

The first digit of an added entry will be a "7." The second and third digits of the tag will be derived according to the general rules for tagging headings, page 31 with two additions:

1. A title which is traced in a different form from the short title, will be tagged | 7 | 4 | 0 |. (When the title added entry is the same as the short title, it will not exist as a separate field in the record, but there will be an indicator in the title statement which may be used to automatically generate a title added entry.)
2. A proper name not capable of authorship will be tagged | 7 | 5 | 3 | .

These tags may be repeated as often as necessary.

B. Indicators

1. [illegible] will be assigned according to the general rules for indicators used with headings, page 31 .
2. An indicator showing the type of added entry will be added to the field to facilitate filing.
   a. Alternative entries: A 0 (zero) indicator will show that the added entry could be subfiled by title. This indicator will be used when an added

entry is likely to be thought of as an author of the work. The following categories are typical:

1) Most corporate added entries
2) Personal added entries without designation of function
3) "Joint author" and "joint compiler" added entries
4) "Supposed author," etc., added entries
5) Personal and corporate added entries with legal designations such as "defendant"
6) Added entries for proper names not capable of authorship.
7) "Editor" added entries when the main entry is not a personal name

b. Secondary entries: A "1" indicator will show that the added entry could be subfiled by main entry. This indicator will be used with all added entries not otherwise covered including the following:

1) Title traced differently added entries
2) Non-analytical title or author-title general secondary entries
3) Illustrators, translators, and arrangers
4) Editors when main entry is a personal name

c. Analytical entries: A "2" indicator will show that the added entry could be subfiled according to the following elements (if necessary): (1) date, (2) place, and (3) publisher. This will be used with analytical title or author-title added entries.

3. The indicators for form of name and type of added entry will appear in the record in the first indicator position by way of a stacked code.

7	0	0	Personal Name

	Alternative Entries	Secondary Entries	Analytical Entries
Forename	@	D	H
Single Surname	A	E	I
Multiple Surname	B	F	J
Name of Family	C	G	K

7	1	0	Corporate Name
7	1	1	

Surname (inverted)	@	D	H
Place, or Place + Name	A	E	I
Name (direct order)	B	F	J

720 Corporate Name with Form Subheading

Alternative Entry = 0

Secondary Entry = 1

Analytical Entry = 2

730 Uniform Title Heading

Alternative Entry = 0

Secondary Entry = 1

Analytical Entry = 2

740 Title Traced Differently

The indicator will not be used with this field.

753 Proper Names Not Capable of Authorship

The indicator will not be used with this field.

SERIES ADDED ENTRIES (Tag $\boxed{8}\boxed{}\boxed{}$).

This field will only be used for those series which are traced in a different form from the series notes.* The first digit of the tag will be an "8." Series added entry tags may be repeated as often as necessary and in any order.

A. Series entered under author

1. Tags.

   The second and third digits of this tag will be derived according to the general rules for headings, page 31. The title portion will have its own tag. The first two characters of the tag will be the same as those used to define the heading. The third character will be an "8." Whenever the series has a number, a delimiter will separate it from the rest of the series.

2. Indicators.

   Indicators for the form of name of personal or corporate author will be as follows:

Personal name		Corporate name	
Forename	= 0	Surname (inverted)	= 0
Single Surname	= 1	Place, or Place + Name	= 1
Multiple Surname	= 2	Name (direct order)	= 2
Name of Family	= 3		

---

*For series added entries traced in the same form as that in the notes, see section on series notes, pages 90-93)

Example:

```
|8|1|0|1|  (Mexico (City)$Universidad Nacional.$
 \_/  V             Instituto de Investigaciones
 Tag  Indicator     Historicas. |8|1|8| Serie de
                    historia general,$5)
```

B. Series entered under title (Tag |8|4|0|).

Whenever the series has a number, a delimiter will separate the number from the rest of the series. The indicators will not be used with this tag.

APPENDIXES

In the past it has been common for MARC workers tagging bibliographic information for conversion to machine-readable form to have to look up each tag on a reference list. In fact, the list was printed directly on the MARC input worksheet to facilitate the look-up. It seems apparent, however, that the complexity of the codes in certain parts of the MARC II format would make constant look-ups time-consuming and tiresome. In areas where indicators include stacked codes, such as tags 100 and 700, the chance for error would be great and the possibility of memorizing the entire scheme remote. The new format was obviously conceived as a scheme for recording information in computerized form; what must be added is a method for tagging the data for input—a method designed for the convenience of people rather than for ease in processing or searching.

Just as programmers are used to working with numerical digits, so librarians commonly handle data in the form of words. The obvious answer to the input tagging problem, therefore, would be to use words as tags. It would be simple for a translate program in the computer to change "Title" to 240, for example, or "Publisher" to 261. But full word tags can get excessively long, and although it is certainly possible, it is also somewhat cumbersome to ask the computer to record tag 6101 for "Subject added entry, Corporate Name, Place and name." In addition, such a word-tag scheme presents serious physical problems connected with the preparation of the cataloging data. How much space will be needed on the worksheet for such lengthy tags, and how long will a cataloger spend writing them?

By modifying the word-tag system one could easily develop a list of mnemonic tags using abbreviations. One could soon learn, for example, to recognize ME as Main Entry, SER as a Series Note, and SUB as a Subject Added Entry, although even abbreviations can get quite long. It would probably be necessary to elaborate SER into SERNO and SERAD to distinguish Series Notes from Series Added Entries, and by the time one has added CORP for a corporate name, or CORPFORM or CORPF for a corporate name with a form subheading, the result can easily be a tag such as SUB:CORP:PLA for a subject added entry with a corporate name sub-filed by place 6101 or AE:UT:SE for an added entry consisting of a uniform title that is a secondary entry 7302

Such a tagging scheme can no doubt work and work quite well. It uses terms librarians are familiar with and imposes on the machine the job of converting natural language--or at least a code derived from what is natural language to a librarian--to numeric tags. At the Library of Congress, though, it would be necessary to carry the compromise with word-tags a step further. Tags often have to be written on printed LC catalog cards where an already established card file is being converted, and any tagging scheme used must occupy a minimum of space on the worksheet. Also, observation of data preparation during the first year of MARC seems to indicate that the length of the individual tag is probably as much a factor in preparation rates as the size of the list from which each tag must be selected. As a result, the system under consideration at LC consists of a list of initial tags, none of which uses more than three letters to represent three numeric digits. A disadvantage of using initials rather than complete words is that it is not possible to be consistently mnemonic. Since the initial "S," for example, could stand for Supplied Titles, Series Notes, Subject Added Entries, or Series Added Entries, it was necessary to add another initial for each. A sample list of mnemonic tags and the numerics to which they would be equated is reproduced on pages 110-113. The list is a long one and no doubt codes will still have to be looked up each time they are applied. Because initials are used, however, a cataloger using the list over a period of time should become familiar with the most commonly used tags, and look-ups will probably drop in frequency far faster than would be possible with numeric tags.

It should be noted that certain numeric tags are generated by the computer from delimiters placed in the data. Thus, by formatting author-title entries so that they become author-delimiter-title (e.g., "6000 Joyce, James,$$1882-1941.#Finnegans Wake.") one need only tag the first item, or author. This will occur in every case where a tag ends in the digit 0.

In every case a three-letter input tag will convert to a three-digit numeric tag. Where a fourth letter is added, that letter will convert to a fourth digit, which will be carried with the data as an indicator. In certain fields it is anticipated that a fifth letter will be input, with a conversion program converting the fourth and fifth letters into a stacked-code indicator. This will help to avoid looking up lists of stacked codes and will permit the inputting of tags and indicators by different catalogers when this is desirable.

Implementing such a tagging scheme can probably best be done by preprinting parts of the tags on a worksheet and reserving blocks of space for certain kinds of information, although anyone designing such a worksheet should have some knowledge of how long each field is likely to be in order to allow for the great majority of cases. For this purpose a survey of the first 10,117 records on the MARC data base, indicating minimum, average, and maximum lengths of each major bibliographic element, is reproduced on page 114. Presumably someone designing a worksheet for the recording and tagging of bibliographic data would reserve a space near the top of the sheet labeled Title Statement. This would include a space with the tag TIL preprinted, which would be followed by enough space for a typist to record at least 450 characters of data. Other blocks would follow a similar pattern, although in most blocks it would not be possible to preprint the entire tag. In the case of the main entry only the first two letters could be preprinted, and for the bibliographic notes none of the tags' letters could appear, unless the scheme were changed to begin all bibliographic note tags with B, or some other letter.

Because of other system requirements, the Library of Congress will be unable to use a blocked input worksheet at this time. Examples of an idealized worksheet and the worksheet under consideration for use at LC are shown on pages 115 and 116.

The fixed-length fields should prove quite simple to input using simple numeric tags for identification. At the Library of Congress past practice will probably be continued, with a series of blocks being laid out with a simple word or phrase for identification, a numeric tag which will be punched, and a space for the data itself. The form of the data will be either a yes/no or X/b̸ indicator or a simple numeric or letter code representing a date, a country, the form of illustration(s) present, etc. It seems likely that with some care and foresight a worksheet which combines people-oriented data preparation procedures with efficient input programs for the computer can be designed to suit any individual application.

MNEMONIC INPUT TAGGING SCHEME

Tag & Ind.	Mnemonic	Variable Field Data Element
003 0	LAN	Languages
1	LANX	Indicator: Work Is A Translation
		NUMBERS
010	CRD	LC Card Number
011	NBN	National Bibliography Number
012	SBN	Standard Book Number
013	PLN	PL 480 Number
014	SCO	Search Code
019		Local System Number
		KNOWLEDGE NUMBERS
020	BNB	BNB Classification Number
030	DDC	Dewey Decimal Classification Number
050 0	CAL	LC Call Number
1	CALX	Indicator: Book Is Not In LC
051	COP	Copy Statement
060	NLM	NLM Call Number
070	NAL	NAL Call Number
071	ASC	NAL Subject Category Number
080	UDC	Universal Decimal Classification Number
090		Local Call Number
		MAIN ENTRY
100	MEP	Personal Name
0	F	Forename First
[illegible]	[illegible]	Surname First
[illegible]	M	Multiple Surname
[illegible]	[illegible]	Name of Family
110	MEC	Corporate Name
0	[illegible]	Surname
[illegible]	[illegible]	Place and Name
[illegible]	[illegible]	Name
111	MEM	Meeting or Conference
0	[illegible]	Surname
[illegible]	[illegible]	Place and Name
[illegible]	[illegible]	Name
120 0	MEF	Corporate Name with Form Subheading
130 0	MEU	Uniform Title Heading
		SUPPLIED TITLE
200 0	UTI N	Uniform Title
[illegible]	[illegible]	Indicator: Title Is On LC Printed Card
210 0	ROM N	Romanized Title
[illegible]	[illegible]	Indicator: Receives Title Added Entry
220	TRA	Translated Title

Tag & Ind.	Mnemonic	Variable Field Data Element
		TITLE PARAGRAPH
2 4 0 0	T I L N	Title
1	A	Indicator: Title Receives Added Entry
2 5 0	E D N	Edition Statement
		IMPRINT
2 6 0	P L A	Place
2 6 1 0	P U B	Publisher
1	P U B X	Indicator: Publisher Is Main Entry
2 6 2	D A T	Date
3 0 0	C O L	Collation
3 5 0	P R I	Bibliographic Price
3 6 0		Converted Price
		SERIES NOTES
		Series Traced the Same
4 0 0	S E P	Personal Name
0	F	Forename First
1	S	Surname First
2	M	Multiple Surname
3	D	Name of Family
4 0 8	Delimiter	Title
4 1 0	S E C	Corporate Name
0	S	Surname
1	P	Place and Name
2	N	Name
4 1 1	S E M	Meeting or Conference
0	S	Surname
1	P	Place and Name
2	N	Name
4 1 8	Delimiter	Title
4 4 0	S E T	Title
4 9 0 0	S E U	Series Untraced
1	S E D	Indicator: Series Is Traced Differently
		BIBLIOGRAPHIC NOTES
5 0 0	B I B	Bibliography Note
5 1 0	D I S	Dissertation Note
5 2 0	C O N	Contents Note (Formatted)
5 3 0	B N D	"Bound with" Note
5 4 0	L I M	"Limited use" Note
5 5 0	G E N	General Note (All Others)
5 6 0	A N N	Annotation or Abstract
		SUBJECT ADDED ENTRIES
6 0 0	S U P	Personal Name
0	F	Forename First
1	S	Surname First
2	M	Multiple Surname

Tag & Ind.	Mnemonic	Variable Field Data Element
		SUBJECT ADDED ENTRIES (cont.)
6 0 0	S U P	Personal Name (cont.)
3	N	Name of Family
6 0 8	Delimiter	Title
6 1 0	S U C	Corporate Name
0	S	Surname
1	P	Place and Name
2	N	Name
6 1 1	S U M	Meeting or Conference
0	S	Surname
1	P	Place and Name
2	N	Name
6 1 8	Delimiter	Title
6 2 0	S U F	Corporate Name with Form Subheading
6 2 8	Delimiter	Title
6 3 0	S U U	Uniform Title Heading
6 5 0	S U T	Topical
6 5 1	S U G	Geographic Name
6 5 2	S U J	Political Jurisdiction (Alone or With Subdivision)
6 5 3	S U N	Proper Names Not Capable of Authorship
6 5 5	S U X	General Subdivision (Other Than Period or Place)
6 5 6	S U Y	Period Subdivision
6 5 7	S U Z	Place Subdivision
6 6 0	M S H	NLM Subject Headings (MeSH)
6 7 0	A B V	NAL Agricultural/Biological Vocabulary
6 9 0		Local Subject Heading System
		OTHER ADDED ENTRIES
7 0 0	A E P	Personal Name
0	F	Forename First
1	S	Surname First
2	M	Multiple Surname
3	N	Name of Family
7 0 8	Delimiter	Title
7 1 0	A E C	Corporate Name
0	S	Surname
1	P	Place and Name
2	N	Name
7 1 1	A E M	Meeting or Conference
0	S	Surname
1	P	Place and Name
2	N	Name
7 1 8	Delimiter	Title
7 2 0	A E F	Corporate Name with Form Subheading
7 2 8	Delimiter	Title
7 3 0	A E U	Uniform Title Heading
7 4 0	A E D	Title Traced Differently
7 5 3	A E N	Proper Names Not Capable of Authorship

				SERIES ADDED ENTRIES
800		SAP		Personal Name
	0		F	Forename First
	1		S	Surname First
	2		M	Multiple Surname
	3		N	Name of Family
808		Delimiter		Title
810		SAC		Corporate Name
	0		S	Surname
	1		P	Place and Name
	2		N	Name
811		SAM		Meeting or Conference
	0		S	Surname
	1		P	Place and Name
	2		N	Name
818		Delimiter		Title
840		SAT		Title
900				BLOCK OF 100 NUMBERS FOR LOCAL USE

RESULTS OF A SURVEY OF 10,117 MARC RECORDS

Variable Field Data Element	Minimum Length	Average Length	Maximum Length
National Bibliography Number	8	10	15
Dewey Decimal Classification Number	1	7	20
LC Call Number	5	11	40
Copy Statement	20	29	43
Main Entry	6	25	171
Supplied Titles	6	25	82
Title	2	30	82
Edition Statement	4	12	130
Imprint	13	41	231
Collation	6	24	105
Series Notes	5	41	199
Bibliographic Notes	5	54	785 *
Subject Added Entries	4	26	166
Other Added Entries	9	28	160
Series Added Entries	1 **	24	146

Character counts include spaces and delimiters.

* Includes annotations.

** Includes 1-digit codes.

A SAMPLE INPUT WORKSHEET
USING MNEMONIC TAGS

TAGS	DATA
MPS	Richards, James T.$$1923-
UTI	
TILX	Automation for Bogmore County libraries.$ Report of a pilot project $ conducted by James T. Richards and Daniel J. Haskell of the Information Survey Corporation in the Centerville Public Library.
EDN	
IMP	New York,$Foundation for Public Libraries,$1967.
COL	98 p.$ illus.$ 24 cm.
RCN	(Foundation for Public Libraries.$ Automation series$no. 10)
STO SGN	Libraries-- Automation.
STO/Q SPL	Public libraries-- Bogmore County, Pa.
SCP	Centerville, Pa.$ Public Library.
APSA	Haskell, Daniel John,$$$joint author.
ACNA	Information Survey Corporation

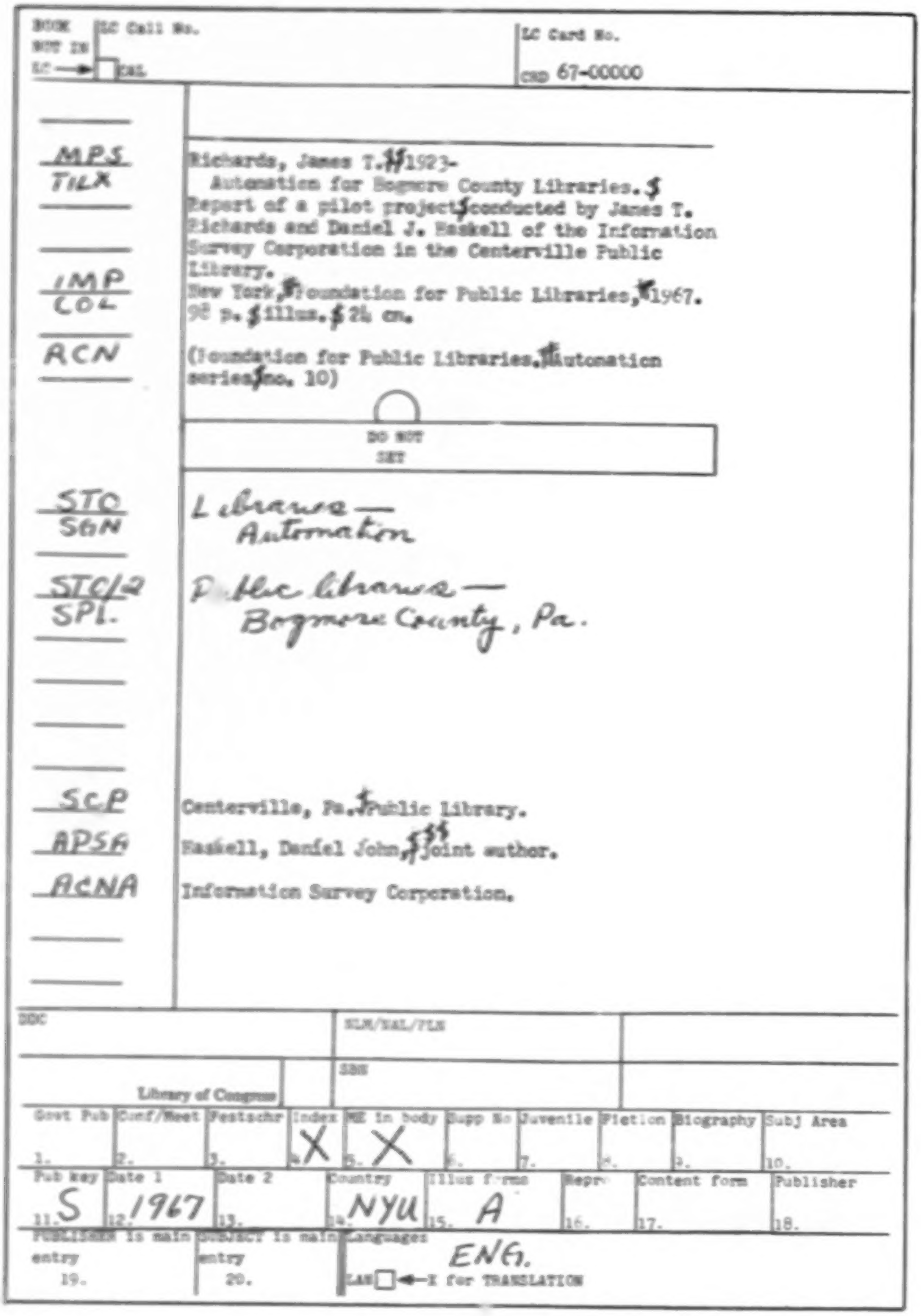
DDC		NLM/NAL/TIN	
Library of Congress		SBN	

Govt Pub 1.	Conf/Meet 2.	Festschr 3.	Index 4.	MI in body 5.	Supp No 6.	Juvenile 7.	Fiction 8.	Biography 9.	Subj Area 10.
			X	X					

Pub key 11.	Date 1 12.	Date 2 13.	Country 14.	Illus forms 15.	Repro 16.	Content form 17.	Publisher 18.
S	1967		NYU	A			

PUBLISHER is main entry 19.	SUBJECT is main entry 20.	Languages
		ENG LAN ☐ →X for TRANSLATION

A SAMPLE INPUT WORKSHEET UNDER CONSIDERATION
BY THE LIBRARY OF CONGRESS
(Produces a Temporary 3x5 Card)



BOOK NOT IN LC → ☐ CAL

LC Call No.

LC Card No.
CRD 67-00000

MPS
Richards, James T.$$1923-

TILX
Automation for Bogmore County Libraries.$
Report of a pilot project$conducted by James T.
Richards and Daniel J. Haskell of the Information
Survey Corporation in the Centerville Public
Library.

IMP
New York,$Foundation for Public Libraries,$1967.

COL
98 p.$illus.$24 cm.

ACN
(Foundation for Public Libraries.$$Automation
series$no. 10)

DO NOT SET

STC
SGN
Libraries —
Automation

STC/2
SPL
Public libraries —
Bogmore County, Pa.

SCP
Centerville, Pa.$Public Library.

APSA
Haskell, Daniel John,$$$joint author.

ACNA
Information Survey Corporation.

DDC

NLM/NAL/FLN

SBN

Library of Congress

Govt Pub 1.	Conf/Meet 2.	Festschr 3.	Index 4. X	ME in body 5. X	Supp No 6.	Juvenile 7.	Fiction 8.	Biography 9.	Subj Area 10.
Pub key 11. S	Date 1 12. 1967	Date 2 13.	Country 14. NYU	Illus forms 15. A	Repro 16.	Content form 17.	Publisher 18.		

PUBLISHER is main entry 19.

SUBJECT is main entry 20.

Languages ENG.
LAN ☐ ← X for TRANSLATION

According to usual library practice the call number of a book is placed in the upper left-hand corner of the catalog card. This call number is generally broken into two or more lines to allow it to fit into the left margin. The attempt to continue this practice raises many problems when catalog cards are generated by computer.

The first problem arises from the amount of space which must be allowed as a left-hand margin in order to accommodate a call number. A computer-printed card has 882 available spaces for printing (876 when the card has a hole). This is considerably less than the number available on an LC printed card. Therefore, this left-hand margin should be as narrow as possible to conserve space.

The LC call number is made up of several elements--the class number, book number, the edition date, the volume number, etc. Each call number contains a class number and most contain a book number. The other elements are added as necessary. In breaking down a call number it is desirable to have the divisions occur between elements so that the resulting number will be intelligible to someone who knows something about call numbers.

For example:

```
UG633    - Class no.  is preferable to UG63       UG
.A3763   - Book no.                    3.A37      633
no.62-5  - Vol. no.                    63 no. or  .A37
1960     - Date                        62-5       63
                                       1960       no.
                                                  62-5
                                                  1960
```

The elements of a call number are frequently six or seven or more characters long. Therefore, in order to break down the call number in an intelligible fashion a wide left-hand margin must be provided.

A second problem arises from the difficulties of devising a set of rules for a machine to subdivide a call number which has been recorded in one line format, e.g. Q64.U6 Ser. 4, vol. 16, no. 1.

If instructions are written to subdivide before each period, after each comma, and at each space, the first part of the number is intelligible but the last half is unsatisfactory. For example:

Q64
.U6
Ser
.4,
Vol
.16,
no
.1

One solution is to have each call number subdivided manually at the time of input by the insertion of delimiters at each point of division. This is expensive in terms of manpower, and libraries would not always find that the delimiters had been inserted in the proper position for carrying out their own practice.

Another solution is to abandon the divided format and print the call number in one line, perhaps in the upper left-hand corner. This would allow a card to be designed with a narrow left-hand margin. This method is less attractive when the card has an overprinted heading. In such a case, it might be necessary to leave a larger margin at the top of the card to accommodate both the call number and the overprinted heading.

A set of rules has been formulated by which a computer program may be written to divide the LC call number. This method is based on the idea that most LC call numbers break down into two distinct parts--the class-book number portion and the volume-date portion. Punctuation marks and spaces have different meanings in the two parts, e.g. the period in the first part is usually a decimal point, while the period in the second usually indicates a mark of abbreviation. The rules formulated below are designed to recognize this fundamental difference. The basic rules apply to the first part of the number while those in the exception relate to the second part.

Basic Rules

1. No line is to exceed seven spaces.
2. Start a new line before a period (.), after a comma (,), or at a space.

3. If there is a segment of more than 7 spaces without a break as indicated above, start a new line after a slash (/), after a hyphen (-), before the second upper case alpha, or after the 7th character (in that order of priority). If all seven characters are alphas break at end of 6th alpha and add a hyphen. Do not start more lines than necessary to stay within the 7 character limit.

4. Exception: When any space occurs after the second line the following exceptions apply:

    a. All the rest of the number is to be included on one line if there are fewer than 7 characters.

    b. If there are more than 7, start a new line after a comma (,), at a space, after a slash (/), after a period (.), after a hyphen (-), or after the 7th character (in that order of priority). If all seven characters are alphas, break at end of 6th alpha and add a hyphen. Do not start more lines than necessary to stay within the 7 character limit.

NOTE: All punctuation marks are considered to occupy one space and are included in the counting. Each space is counted as a space, but when division is made at a space, the space is dropped in the divided format. In the MARC II format a delimiter is to be placed between the LC classification number and the book number. This delimiter is to be ignored in applying the above rules.

To utilize this set of rules, it will be necessary to design a catalog card format with an eight column left-hand margin. This will use up 144 characters or 16.3 percent of the card space.

These rules were applied to the catalog card sample. An intelligible call number was produced in each case. Examples of some of the problem call numbers and how they would be subdivided follow:

1) JX1977.A2 ST/SOA/40

JX1977
.A2
ST/SOA/
40

2) UG633.A3763 no.62-5 1960

UG633
.A3763
no.62-5
1960

3) J85 1951. C9j 82d, 1st no. 17

J85
1951
.C9j
82d,1st
no.17

4) DT333.S34 47.Jahrg.,Heft Nr. 8

DT333
.S34
47.
Jahrg.,
Heft
Nr.8

5) Z3407.B no. 32, etc.

Z3407
.B
no.32,
etc.

6) BX2264.M56 1565 Rosenwald Coll.

BX2264
.M56
1565
Rosenw-
ald
Coll.

Assume the directory has the following contents:

Tag	Length	Starting Character Position
1	0100	0200
2	0100	0300
3	0100	0400
4	0100	0500
7	0100	0600
8	0100	0700

Method No. 1*

If an institution modifies a field so that its length is increased by n characters and the subsequent data fields in the record are adjusted, the directory could be updated by adding an increment of n to each starting character position following the entry that was modified. (The same rule will follow if the length is decreased by n characters. An increment of n would be subtracted from each starting character position following the entry that was modified.)

---

*This report references all character positions as sequentially numbered from the first character in the record, i.e. all records begin with character position 1. For machine processing, character position 1 is considered to be the zero position in the record. An increment is added to a base address, i.e. the starting character address, and the result is the beginning address and starting character position of the next data field, e.g. if a data field begins with character position 1, i.e. the zero position, and is is give characters in length, the next data field will begin in character position 5, that is:

f_1	f_1	f_1	f_1	f_1	f_2
0	1	2	3	4	5

Where f_1 = data field 1 and is five characters in length
f_2 = data field 2

If tag 3 were to be modified and its length changed from 100 characters to 150 characters the result would be as follows:

Tag	Length	Starting Character Position
1	0100	0200
2	0100	0300
3	0150	0400
4	0100	0550
7	0100	0650
8	0100	0750

Method No. 2

If an institution modifies a field such that its length is increased or decreased by n characters, and the subsequent data fields in the record are not adjusted, the directory could be updated by adding or subtracting n characters from the entry modified, changing the starting character position of that entry only to the first free character position in the modified record. The result would be that the original data field would still be in the record, the directory would reflect its modified length and starting character position, and the data fields would not have to be restructured to reflect the change.

If tag 3 were to be modified and its length changed from 100 characters to 150 characters the result would be as follows:

Tag	Length	Starting Character Position
1	0100	0200
2	0100	0300
3	0150	0800
4	0100	0500
7	0100	0600
8	0100	0700

REARRANGEMENT OF DATA FIELDS FOR LOCAL USE

An institution might find it convenient to rearrange for local use the fields and, therefore, the starting character positions in the directory. For example, it might be desirable to cluster all names together in a record regardless of function. A computer program could be written to adjust the directory using the following techniques:

1. Build a translation table containing the tag order of the data fields in the communications format (1)* and the tag order desired in the local institution.(4)

2. Each tag of the local format will have its associated length (5) as part of the translation table, i.e. the length of each field of the exchange format (2) will be stored with the associated tag in the local format.

3. Set a counter equal to the starting character position of the variable field area in the exchange format.

4. Starting with the first tag of the communications format, successively compare this tag with each tag in the local format.

5. If the tags are not equal, increment the counter (see step 3) with the corresponding length of the local format.

6. If the tags are equal, store the counter as the starting character position of that tag in the local directory.

7. Repeat this procedure, until the tags in the communications format have been exhausted.

Example:

Assume the desired arrangement of data fields in a local institution is 9, 8, 1, 2, 3, 4, 7, and the arrangement in the communications format was 1, 2, 3, 4, 7, 8, 9.

---

*Numbers apply to columns in the following example.

Communications			Local		
(1) Tags	(2) Length of Fields	(3) Starting Character Position	(4) Tags	(5) Length of Fields	(6) Starting Character Position
1	100	0200	9	050	0320
2	080	0300	8	070	0420
3	110	0380	1	100	0500
4	060	0490	2	080	0610
7	090	0550	3	110	0670
8	070	0640	4	060	0250
9	050	0710	7	090	0200

1. Set counter equal to 200 (The starting character position of the variable field area--column 3).

2. Compare first tag in column 1 with first tag in column 4.

3. a) 1 ≠ 9 -- add length 1 from column 5 to counter; counter=200+50=250

   b) 1 ≠ 8 -- add length 2 from column 5 to counter; counter=250+70=320

   c) 1 = 1 -- store counter as starting character position of first tag in column 6.

4. Repeat steps 1 through 4 until the tags in column 1 are exhausted.

The rearranged directory would now appear as follows:

Tag	Length	Starting Character Position
1	100	0320
2	080	0420
3	110	0500
4	060	0610
7	090	0670
8	070	0250
9	050	0200

The Library of Congress will follow the standards set by the United States of America Standards Institute (USASI) for the interchange of information on magnetic tape. Therefore, the maximum length of a physical record* will be 2048 characters. Since the maximum length of bibliographic data cannot be predetermined, it must be assumed that in some instances the logical record will exceed the maximum allowable length of a physical record. When this situation occurs, the following conventions will be implemented:

1. There will be one leader per logical record.
2. There will be one directory per logical record.
3. Each physical record will include data up to the last possible character within the limit of 2048 and the next physical record will be a continuation of that data field that exceeded the count 2048 in the prior physical record, i.e. a data field may be split between physical records.

The capability will exist to block logical records into a physical record when the logical record is less than the maximum number of characters (2048) of a physical record.

The decision to block logical records will be the option of the producer of the information. The USASI standard provides for either blocked or unblocked records. Each physical record will have a four figure record count which will equal the actual size of the logical record plus four in the case of unblocked records or 2048 in the case of blocked records.

---

*Physical record--a unit of information separated by an inter-record gap on magnetic tape. A logical record could be segmented into several physical records because the length of the record is greater than the maximum length of a physical record. A logical record could also contain fewer characters than the maximum allowed for in the physical record. In the communications format, the physical record is ≤ 2048 characters.

UNIVERSITY OF CHICAGO EXPERIMENTAL SEARCH CODE — APPENDIX VI

The search code is generated from certain bibliographical elements in an item record. It is designed so that it can be easily generated by somone with a book, catalog card, citation, or partial citation in hand so that a quick search of the system files can be made for a particular item. At the present time, this code will be generated before an item is input and will be used for research and demonstration purposes. Further study is needed to determine its uniqueness, how easily users can generate it, what type of request problems it can help solve, and whether a program can create it following input.

Each search code will contain a maximum of 16 alphanumeric characters which are to be selected according to a specified procedure. If there are cases where the choice of characters is not clear, more than one code may be input at the same time. This technique is used in preference to leaving blanks, which are set to match anything else. In some cases, however, blanks are unavoidable.

Author: six characters

1. Surname Entry:

   a. Take the first four characters from the surname in the order given, omitting marks of punctuation.

   b. Take the first character from the forename and the first character from the middle name, if any, omitting titles of address, descriptions, and marks of punctuation.

   Ward, Mrs. Humphrey = wardhb̸

   Edison, Thomas A. = edista

   Huxley, Aldous, ed. = huxlab̸

2. Forename Entry:

   Take the first 6 characters from the forename in the order given, omitting marks of punctuation, titles of address, and descriptions.

Alexander the great = alexan

James, King of England = jamesƀ

3. Other Entries:

If the entry is corporate, uniform, or title, insert six blanks in place of the six characters.

Title: six characters

All of these characters are to come from the title statement even if it is also the main entry. Only the first segment (usually up to the first mark of punctuation) should be used in selecting these characters.

If the first word in the title is an article, ignore it. Then find the first word containing two consonants. Take the first two consonants appearing in the word for the search code. Repeat these steps with a second and third word. If there are not three words with two consonants, supply the balance of the six characters needed with those characters immediately after the last consonant used.

The Vicar of Wakefield Church = vcwkch

The Vicar of Wakefield = vcwkef

The Vicar of Wake = vcwkeƀ

The Vicar of? = vcarof

In selecting characters from the title statement, treat hyphenated words as two words.

Two-toned cadillac = twtncd

Treat numbers which have not been spelled as all consonant words.

Battle of 1066 = bt1066

Europe 1915-1945 = rp1919

The 9th symphony = 9tsymp

Treat a set of roman numerals as a regular word.

Charles II = charle

If bracketed segments are not a part of the title--only an explanation--ignore them; if they are a part of the title, include them.

96 [i.e. ninety-six] years ago = 96yrsb̸

The free [and] mighty = frndmg

Place of Publication: one character

Take the first character from the first city (or place) of publication. If there is no place of publication, leave a space.

New York, London = n

Garden City, N.Y. = g

The Hague = t

Date of Publication: three characters

Take the last three digits from the date of publication (in preference to the copyright date); if there is no publication, use any date (copyright, printing, reprint, etc.)

If there is no date (indicated by n.d.) leave a space. If there are two dates of publication use the latest.

1966 = 966
1966, c1965 = 966
c1966 = 966
1966, 1965 = 966

The Library of Congress has had a policy for many years of choosing, where necessary for certain works, a "uniform title" or "filing title," which is the particular title by which a work that has appeared under varying titles is identified for cataloging purposes. ("Conventional title" is the term formerly used for the uniform title of a musical work.) When such a heading was selected to bring together in the catalog all entries for a given work, it may or may not have been printed on the LC catalog card, depending on the following conditions:

1. In cases where the uniform title was the main entry heading, it was of course printed on the LC card.

2. In cases where the uniform title was not used as main entry heading, it was omitted from the printed card and was typed only on the cards prepared for use in the LC card catalogs. It was referred to as a "filing title" in internal LC usage.

During the development of the MARC Pilot Project, the decision was made to include the "conventional" or "filing title" as a separate data element in the MARC tape record (Tag 15). The primary intention was to provide a means for the Library's own experimentation with MARC tapes. The participant libraries have thus been receiving tape records containing these filing titles, but the filing titles do not appear on the corresponding LC printed card.

The new AA Rules, Chapter 4, provide for the choice of uniform titles for a number of categories of works. The uniform title can be applied either as a main entry heading or can be interposed in bracketed form between the main entry and the transcription of the title page title. The Library is following only a portion of Chapter 4, so far as what is printed on the cards is concerned. The limitations are spelled out on page 145 of the rules. In general, uniform titles printed on LC cards will be largely confined to the following categories:

Sacred scriptures
Creeds and confessions common to different religious bodies

Liturgical works
Anonymous works without titles
Early anonymous chronicles and literary works
Early collections entered under title
Early anonymous compilations of ancient laws and customs
Peace treaties and international conventions
Editions of laws
Editions of music
Recordings of music

In the few cases where the bracketed uniform title appears on the LC printed card, it will appear in the communications format with a $\boxed{2|0|0}$ tag and an indicator containing a 1. In categories other than the above, where a uniform title is needed for filing purposes in LC's catalogs, the Library will continue its standing policy of omitting uniform titles from the printed cards and will type them only on the cards used in LC card catalogs. The communications format will include the uniform title with a $\boxed{2|0|0}$ tag and an indicator containing a 0 (zero).

THE SEVENTH EDITION OF THE SUBJECT HEADINGS LIST IN THE COMMUNICATIONS FORMAT

The seventh edition of Subject Headings Used in the Dictionary Catalogs of the Library of Congress was printed by the Government Printing Office, using a magnetic tape specifically recorded for a printing application. The tape included characters necessary to indicate for the photo-composition device, changes in fonts, point sizes, grids, etc. In order to make the tapes more useful to the library community, the Library of Congress, through its Information Systems Office, is currently engaged in a project with contractual support to reformat the subject heading tape and remove most of the typographical symbols. In order to preserve standardization in format for bibliographic data, the subject heading tape is being recorded in the communications format. Since this project is being performed at the same time as the MARC II format report is being written, it was considered useful to use the subject headings as an example of another type of data (i.e. authority data) recorded in the same format as described in this report. It should be noted that the subject headings project has not been completed as yet and, therefore, minor changes could be made to tags, symbols, etc.

SUBJECT HEADINGS LEADER CONTENTS TABLE

Element Number	Name of Leader Data Element	Number of Characters	Character Position on Record
1.	Record Length	5	1-5
2.	Record Status	1	6
3.	Legend		
	a. Legend Control	1	7
	b. Type of Record	1	8
	c. Edition Number	1	9
	d. Unassigned (blank)	2	10-11
4.	Indicator Count	1	12

Leader Element

1. Record Length

The record length has five characters, including itself in the total count.

2. Record Status

The status codes are as follows:

N = New record
C = Changed or corrected record
D = Deleted record
O = Old record

The tapes for the seventh edition will have the letter O in the status code field.

3. Legend

a. Legend Control

This field will be blank.

b. Type of Record

The character "Y" will be used to indicate authority record--subjects.

c. Edition Number

The character "7" will indicate that this record is part of or an addition to the seventh edition of the Library of Congress subject heading list.

d. Blanks

4. Indicator Count

This field will contain a 3.

RECORD DIRECTORY CONTENTS TABLE

Element Number	Name of Record Directory Data Element	Number of Characters	Character Positions in Directory
1.	Tag	3	1-3
2.	Field Length	4	4-7
3.	Starting Character Position	5	8-12

The above represents a typical record directory entry which will be repeated for each variable data field in the record.

VARIABLE FIELDS

Tag

000 Control Number

The control number assigned to each subject heading is a location number originally assigned by the Government Printing Office to provide for correct sequencing of new or corrected subject headings by LC staff members. This number provides a means for sorting records on the master file alphabetically, using the control number as a sorting field and not the actual heading. The control number consists of 12 characters as follows: 0000-000-000

001 Fixed Field

Element Number	Name of Fixed Field Data Element	Number of Characters	Character Position in Field
1.	Number of Entries in Record Directory	3	1-3
2.	Direct/Indirect Code	1	4
3.	LC Classification Number Indicator	1	5
4.	Heading Level Code	1	6
5.	Heading Descriptor Code	1	7
6.	Unassigned Characters (Blanks)	5	8-12

Fixed Field Data Element

1. Number of Entries in the Directory

This field contains the number of entries in the directory.

2. Direct/Indirect Code

This one character fixed field is used to code the presence of the words "direct" or "indirect" in association with the subject headings. For further explanation of the use of these terms refer to page v of the seventh edition of the Library of Congress subject heading list. "(Direct)" and "(Indirect)" will not be part of the data of the machine-readable record, but the indicator will allow the words to be generated at the time of printing. The codes are:

D = (Direct)

I = (Indirect)

0 = not present

3. LC Classification Number Indicator

This one-character numeric indicator shows the presence of one or more LC classification numbers associated with the heading. If a classification number is present, this field will contain a 1. Otherwise it will contain a 0 (zero).

4. Heading Level Code

This is a one-character numeric fixed field which contains a code indicating the hierarchical level of the main heading or subheading appearing in this particular record. This level corresponds to the indentation of the heading in the printed format of the text. The codes are:

1 = Main heading

2 = Sub-heading

3 = Sub-sub-heading

4 = Sub-sub-sub-heading

5 = Sub-sub-sub-sub-heading

Example: "Accounting" as a main heading is coded with a "1." Its sub-heading, "--Machine methods," is a first level sub-heading and is coded "2."

5. Heading Descriptor Code

This is a one-character code which describes certain characteristics of the record heading (field $\boxed{040}$). The codes are:

H = A main subject heading or sub-heading which is used in the Library of Congress catalogs.

S = A term which is not used in the Library of Congress catalogs and which provides a "see" cross reference to the subject term which is used as a heading.

A = A special record which contains only asterisks in the record heading (field $\boxed{040}$). These asterisks separate groups of sub-headings to indicate the start of a new alphabet. (See page 436 of the seventh edition of the Library of Congress subject heading list.)

6. Space reserved for later use.

$\boxed{010}$ Higher Level Headings

If a record is other than a main heading, i.e. a sub-heading, the previous heading levels up through the main heading are carried in this field. Each heading recorded on this field is separated by delimiters. For example, if a record contains the heading "Juvenile literature" which is a sub-heading for "Biography" which in turn is a sub-heading for the main heading "Aeronautics," i.e. Aeronautics--Biography--Juvenile literature, this field would contain the data as follows:

$\boxed{010}$ Aeronautics$Biography

$\boxed{030}$ LC Classification Numbers

Records which have LC classification notation associated with the headings will have this information recorded in this field. Each classification number will be separated by delimiters which will replace the semi-colons found in the printed text. The parentheses surrounding this data in the printed text will not be carried in the machine-readable record.

Example:

Printed text: Abbeys (Indirect) (Architecture, NA4800-6113; Church history, BX2501-2749; Local history, D-F)

Machine text: Abbeys

030 Architecture, NA4800-6113$ Church history, BX2501-2749$ Local history, D-F

040 Record Heading

This field contains the heading of the record. It may contain the heading level, i.e. main heading or sub-heading. If a sub-heading, the heading will be preceded by a delimiter which replaces the subheading dash in the printed text:

Example:

Printed text: Aachen
-- Siege, 1944

Machine text: 040 $Siege, 1944

100 Scope Note

The scope note for a heading will be recorded in this field exactly as found in the printed text.

300 SA References

All "sa" references are carried in this field separated by delimiters.

Example:

Printed text: Abbeys
sa Cathedrals
Convents and nunneries
Monasteries
Priories

Machine text: 300 Cathedrals$Convents and nunneries$Monasteries$Priories

310 X Tracings

All "x" tracings are carried in this field separated by delimiters.

Example: Abalones

310 Ear-shells$Ormer$Sea-ears

320 XX Tracings

All "xx" tracings are carried in this field separated by delimiters.

Example: ACTH

320 Adrenal cortex$Adrenal glands$Cortisone$Hormones

400 See References

All "see" references are carried in this field separated by delimiters.

Example: Abandoned children

400 Child welfare$Foundlings$Orphans and orphan-asylums.

500 "Example Under" or "Note Under" Notes

These notes will be recorded in this field exactly as found in the printed text.

600 "Also" References

These references will be recorded in this field exactly as found in the printed text.

700 Italics

In order to preserve all information on the GPO machine-readable tape which produced the printed version of the LC subject heading list, this field will be used to denote where italic type faces have been used to print the text. Items which are entirely and invariably in italics, such as "(Direct)," "(Indirect)," LC classification numbers, etc., are not noted by this field. This field is a record directory entry only and does not have text data associated with it. The record directory entry shows the starting character position in the record of a string of italic characters which might appear anywhere in the text data and gives the number of characters which follow in italics. This field will be repeated as many times as necessary.

Example: Abattoirs
See Slaughtering and slaughter-houses
and subdivision Slaughter-houses
under names of cities

If the first character of the word "*and*" in the example above is at character position 256, the two record directory entries necessary to describe the presence of italic characters would appear as follows:

Tag	Length	Position
700	0015	00256
700	0021	00289

The first entry indicates that italics will start at position 256 and continue for 15 characters; the second entry indicates that italics will start at position 289 and continue for 21 characters. The word See in the example does not need a field 700 entry because it is always in italics when used as above.

980 Special Grid Sequence

Typesetting of the diacritical marks in the seventh edition of the LC subject heading list necessitated a shift to a special font grid. The shift sequence from one grid to another was contained in the text data on the GPO tape. The tape produced in the communications format has this grid sequence and the diacritical marks stripped out of the text data; however, to allow for conversion back to the GPO format, this field will contain the grid sequence necessary for producing the printed diacritical marks.

The indicator associated with each tag 980 entry in the record directory will contain a numeric code between 4 and 7 corresponding to the special font grid which contains the needed diacritical mark. The data in field 980 is structured as follows:

1. The first four characters will be numerics which give the character position of the alphabetic character requiring the diacritical.

2. The remainder of the data in this field consists of the symbols specifying the grid sequence.

Example: Épinal, Battle of, 1870.

In the record heading field (field 040), this heading would appear without the diacritical mark. If the above heading is carried in character position 67 of the record, the record directory entry and its data would appear as follows:

	Tag	Length	Position
Directory entry:	980	0012	00125

The indicator shows that the needed diacritical mark, the acute accent, is to be found on grid 6. The length of this directory entry is the nine characters of data plus the indicator found in field 980, illustrated below. The starting character position of the data in field 980 is, for example, 125. Field 980 would contain the following indicator and data.

Indicator: b̸b̸6
Data: 0067$$=*$

The first four digits of the data give the character position of the letter "E" in the heading, and the next five characters are the grid sequence codes which place the acute accent over the letter.

900 Capitalization of Text

Because it is assumed that the subject heading list will be used more for internal machine processing rather than for printing, all alphabetic characters in the data fields will be carried in lower case.

The case shifts which capitalized the alphabetic characters have been eliminated from the text data. However, for printing purposes, it is assumed that the first letter of each main heading and sub-heading will be capitalized. The need for additional capitalization will be shown in this field. The field data consists of sets of four numeric characters which give the character positions of letters which need to be capitalized in the heading.

Example: A3J Vigilante (Bomber)

If the starting character position in the record for this heading is 88, the record directory and its data would appear as follows:

Directory entry:

Tag	Length	Position
990	0015	00134

Indicator: b̸b̸b̸
Data: 008900910102

The length of the field is 12 characters and starts, for example, at position 134. The data consists of three sets of four numeric characters. The first four give the position of the alpha character "J," the next four the position of the character "V," and the last four the position of the character "B." Note: the "A" is assumed to be capitalized because it is the first character of the heading.

USE OF LEGEND EXTENSION

APPENDIX IX

The Information Systems Office of the Library of Congress has worked closely with the Division of Technical Information of the U.S. Atomic Energy Commission and the COSATI Sub-Panel on Transfer of Bibliographic Descriptions by Magnetic Tape during the design phases of the MARC II format. In this design effort, an attempt has been made to provide for the bibliographic needs of the scientific community. This community is engaged in controlling bibliographic items that are published as parts of larger items, e.g. articles in journals, chapters in books, and papers presented at conferences. They are also interested in technical reports and articles in translation.

In order to serve their needs, it is frequently necessary to describe not only the item cataloged, but also all other bibliographic items to which the item is related. For example, in order to describe a journal article, it is also necessary to describe the journal. One way to accomplish this is to provide a separate subrecord for each bibliographic item described in the record. Each subrecord would be equivalent to a bibliographic level. The legend for a given record would indicate which levels were present (see pages 40-44). A record with the legend OAAMS where O=number of additional legends, A=type of record, A=chapter, M=monograph, and S=series, could contain separate cataloging information for each of the three levels present. In addition, it might be desirable to describe a second work and its relationship to the first work, e.g. a work which is a translation of another work. The legend control and variable field 002 described on page 40 provides for this flexibility. The following table shows the values which can be found in the legend control and their meanings.

Value	Meaning
"Blank"	Field 002 does not occur in this bibliographic record
Zero (0)	Field 002 does occur but contains no additional legends
1-9 (Decimal Numbers)	Number of legends in field 002 (a maximum of nine (9)

Example: Leader Legend = 1AAMS
Variable field 002 legend = TAAMS

Use of Legend Extension (cont.)

In the above example the digit 1 would signify that one additional legend follows in field $\boxed{002}$. The letter T expresses the relationship of the two works processed, the first being a translation of the second. In both legends, the data elements recorded in the machine-readable record describe type of record, a chapter, a monograph, a series. In this example, the record includes six bibliographic levels.

It should be noted, that even though the record includes more than one bibliographic level with an attendant number of sub-records, there will still be only one record directory. Under this scheme, separate data elements will be recorded for each level, some of which may have identical tags. That is, the tags for the titles of the chapter, book and series could be the same but appear in different locations in the record directory. To provide the ability to access separate sub-records, there would also be included in field $\boxed{002}$ a directory of the directory. The directory of the directory, like the record directory, can be made up of 12 character entries. Each entry will describe a level in the legend beginning with the first level recorded in the leader area.

Each entry in the directory of the directory will be made up of 4 subfields as follows:

1	2 4	5 8	9 12
Level of the Entry	Number of directory entries for this level	Starting character position in directory for this level	Length of data in various fields for this level in the directory

If there is only one legend in the record (that which appears in the leader area), variable field 002 will start with the directory of the directory.

Using the example on page 149, variable field $\boxed{002}$ can be schematically represented as follows:

Use of Legend Extension (cont.)

002	T	A	A	M	S	b̸	1	0	2	4	0	1	0	0	0	2
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

0	0	2	0	1	0	0	2	0	0	0	1	0	0	3	0
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32

Where character position 1 = relationship (translation)
character positions 2-6 = Legend 2
character positions 7-18 = first entry in the D of D
character positions 19-30 = second entry in the D of D

At the Library of Congress, a catalog record contains no subrecords. Items related to the item cataloged are described in fields within the record, rather than in separate subrecords. As many as three bibliographic levels may be described in the legend, but these levels will not generate subrecords. Since no more than three levels will be described, the legend in the leader will be the only one present. The legend control will be set to blank. There will be no variable field 002 .

Although most libraries do not use the concept of subrecords at this time, the presence of this capability in the format may allow for changes in types of cataloging procedure in the future. It may also provide the necessary framework for the production of microrecords containing the information in contents notes.

FIXED FIELD LOCATOR

Fixed Field	Character Positions on Tape
1. Block Length	1-4
2. Record Length	5-8
3. Library of Congress Catalog Card Number	9-19
4. Supplement Number	20
5. Type of Main Entry	21
6. Form of Work	22
7. Bibliography Indicator	23
8. Illustration Indicator	24
9. Map Indicator	25
10. Conference or Meeting Indicator	26
11. Juvenile Indicator	27
12. Language Indicator	28
13. Language 1	29-32
14. Language 2	33-36
15. Type of Publication Date	37
16. Date 1	38-41
17. Date 2	42-45
18. Place of Publication	46-49
19. Publisher	50-53
Unassigned Field (Blanks)	54-58
20. Height of Volume	59-60
21. Types of Secondary Entries	61-68
22. Series Indicator	69
23. Local Use	70-103
24. Control Indicator	104
25. Length of Record	105-108

DESCRIPTION OF FIXED FIELDS

Fixed Field	Character Position on Tape
1. Block Length	1-4
2. Record Length	5-8

The first two fields contain information necessary for tape operations on the IBM 360 system. This information is irrelevant to 1401 users.

3. Library of Congress Catalog Card Number	9-19

If the LC Card Number has date and number (66-1037) or a prefix with a date and number (AC66-1037), the entire card number (prefix and numerics) appears in the fixed field. Whenever the LC Card Number includes a suffix (66-1037/CD), the suffix does *not* appear in the fixed field for the LC Card Number but rather appears with Tag 94 in the variable field. The suffix field has a maximum character length of three. If there is no suffix to the card number, no Tag 94 will appear in the variable field. Since less than 2 percent of the catalog cards contain suffixes and the suffix does not affect the uniqueness of the number, the decision was made not to include to suffix in the fixed field.

4. Supplement Number	20

Since supplements, indexes and other dashed-on entries are carried as independent records in the MARC Pilot Project, it was necessary to provide a one-character numeric fixed field to identify the supplement number. This is required because the supplements will have the same LC Card Number as the original work. If the record does not represent a supplement, this field is blank.

Fixed Field — Character Position on Tape

5. Type of Main Entry — 21

A one-character alphabetic fixed field identifies the type of main entry as specified in the ALA Rules, as follows:

A = Personal Author
B = Government Body
C = Society or Institution
D = Religious Society or Institution
E = Miscellaneous Corporate Body
F = Uniform
G = Title

6. Form of Work — 22

A one-character alphabetic fixed field identifies the form of the work. For the MARC Pilot Project, only two forms are identified.

M = Monograph
S = Serial

7. Bibliography Indicator — 23

If the work contains any kind of bibliographical information or is itself a bibliography, this fixed field contains an X. Otherwise, the field is blank.

8. Illustration Indicator — 24

If the work contains any type of illustrations other than maps, this fixed field contains an X. Otherwise, the field is blank.

9. Map Indicator

If the work contains maps, this fixed field contains an X. Otherwise, the field is blank.

Fixed Field	Character Position on Tape
10. Conference or Meeting Indicator	26

If the work contains the proceedings or the report of a conference, meeting or symposium, this fixed field contains an X. Otherwise, the field is blank.

Fixed Field	Character Position on Tape
11. Juvenile Indicator	27

If the work is for juveniles, as indicated by the forms of the subject heading and/or the classification number, this field contains an X. All records in the Annotated Card program also contain an X in this field. Otherwise, the field is blank.

Annotated Cards have the prefix AC in the card number and have been designed by the Library of Congress for a card catalog of children's literature. All book publications for children (preschool to young adult) and adult books that appear on young adult and school reading lists are included in the AC program. Reference use and books about children's literature are also included.

The bibliographic record for the AC card is basically the same as the standard LC card. The only differences are:

a. The card provides a short, clear annotation that appears as a note.

b. Subject headings specially designed for children replace the LC subject headings.

c. An Abridged Dewey (Ninth edition) Classification Number is provided.

Fixed Field	Character Position on Tape
d. An "E" for easy book and "Fic" for fiction are provided in place of the Dewey Number when appropriate.	
12. Language Indicator	28
13. Language 1	29-32
14. Language 2	33-36

The alphabetic character that appears in the language indicator describes the use of languages in the work and determines the content of the two language fields as shown below. The codes used in the language fields are either three or four alphabetic characters. If three characters, the language code is left justified with the fourth character position in the field a blank.

S = The work contains only one language. The language is given in the language 1 field and the language 2 field is blank.

T = The work is a translation. Language 1 contains the language of publication, the language 2 field contains the language in which the work was originally written or Multilingual, as in the case of anthologies.

M = The work contains more than one language. The principal language is given in the language 1 field. If only two languages are used, the second language is given in the language 2 field. If more than 2 languages are used, multilingual is given as the second language.

Fixed Field — Character Position on Tape

D = The work is a dictionary of more than one language. If only 2 languages are used, these are given in the language fields. If more than 2 languages are used, the principal language appears in the language 1 field and multilingual is given as the second language.

G = The work is a grammar or reader of the type used in language courses. The native language of the student is in the language 1 field. The language being studied is given in the language 2 field.

15. Type of Publication Date — 37

16. Date 1 — 38-41

17. Date 2 — 42-45

The contents of the two numeric date of publication fields are determined by the character that appears in the alphabetic type of publication date field as follows:

S = The date of publication consists of a known date or a probable date that can be represented by four digits, e.g. 1966? The date is given in the date 1 field. The date 2 field contains the date of copyright if it appears in the imprint statement.

R = The work is a reproduction (such as a reprint or facsimile.) The publication date of the reproduction is given in the date 1 field The date 2 field contains the date of original publication.

Fixed Field — Character Position on Tape

N = The date of publication is not known. Both date fields are blank.

M = The date of publication consists of a multiple date. The initial date is given in the date 1 field. If the terminal date is known it is given in the date 2 field, otherwise the date 2 field is set to the year 9999 to indicate an open ended situation.

Q = One or more of the digits in the imprint date is missing. Such dates are input as follows:

	Key	Date 1	Date 2
18--	Q	1800	1899
189-	Q	1890	1899

18. Place of Publication — 46-49

A four-character alphabetic fixed field gives the place of publication in a four-character mnemonic code.

19. Publisher — 50-53

A four-character alphabetic fixed field contains a publisher code. This code may be two, three, or four characters in length. Should the code contain only two or three characters, it is left justified within the field and the remaining character positions in the field are blank.

*20. Height of Volume — 59-60

A two-character numeric fixed field representing the height of the volume in centimeters.

---

*Note that between fixed fields 19-20 there is an unassigned field of five characters. This is reserved for LC use and should not be used for local data.

Fixed Field	Character Position on Tape
21. Types of Secondary Entries	61-68
Each character in this fixed field indicates a type of secondary entry traced in the record. If the condition is present, the position contains an X; if not the position is blank. The fields are set by the computer programs in the processing of variable field information. The first seven characters described in the following list refer to secondary entries that are not subject added entries.	
An X in this position indicates the presence of the name of at least one Personal Author.	61
An X in this position indicates the presence of the name of at least one Government Body.	62
An X in this position indicates the presence of the name of at least one Society or Institution.	63
An X in this position indicates the presence of the name of at least one Religious Society or Institution.	64
An X in this position indicates the presence of the name of at least one Miscellaneous Corporate Body.	65
An X in this position indicates the presence of at least one Uniform Heading.	66
An X in this position indicates the presence of at least one Title secondary entry.	67
An X in this position indicates the presence of at least one Subject Heading.	68

Fixed Field Character Position on Tape

22. Series Indicator 69

If the work is part of a series, this fixed field contains a X. Otherwise the field is blank. This indicator is set by the computer programs any time a series note is encountered in the variable field processing.

23. Local Use 70-103

These character positions have been set aside for the use of the participating libraries.

24. Control Indicator 104

This one-character alphabetic fixed field is used to indicate the following:

N = This record is new this week.
O = This record was new last week.
R = This record has been revised this week.
(blank) = This record is at least two weeks old.

25. Length of Record 105-108

This four-character numeric fixed field indicates the total number of characters in the record beginning with the first character of the LC Card Number and ending with the last character of the variable field.

VARIABLE FIELD TAGS

Description	Tag No.
1. Library of Congress Call Number	90
2. Dewey Decimal Classification Number	92
3. Main Entry	10
4. Conventional or Filing Title	15
5. Title Statement	20
6. Edition Statement	25
7. Imprint Statement	30
8. Collation Statement	40
9. Series Note (to be an added entry and to be traced in exactly the same form as in the Series Note)	50
10. Series Note (to be an added entry but not to be traced in the form in the Series Note/or not to be an added entry)	51
11. Notes	60
12. Subject Tracing	70
13. Personal Author Tracing	71
14. Corporate Author Tracing	72
15. Uniform Tracing	73
16. Title Tracing	74
17. Series Tracing	75
18. Copy Statement	80
19. National Bibliography Number	83
20. Library of Congress Catalog Card Number	94

DESCRIPTION OF VARIABLE FIELDS

In each variable field, the first three characters give the length of the field. Characters 4-6 contain the identifying tag of the field. At present the third character is used only in certain variable fields; if not used, this character is a blank. The descriptions of the variable fields indicate the use of a third character where relevant.

The first two variable fields contain the Library of Congress Call Number and the Dewey Decimal Classification Number in order to provide rapid access to the information these fields contain.

1. Library of Congress Call Number (Tag 90)

   This field contains a complete Library of Congress call number or a Library of Congress class number or it is blank.

   The presence of only a class number indicates that the Library of Congress cataloged the publication but has not added it to its collections and does not expect to do so. On the standard Library of Congress printed card such class numbers are enclosed within brackets. In the MARC Pilot Project such class numbers are not enclosed within brackets but instead the class number is followed by the letters NLC, which stand for "Not in LC." Two spaces separate the letters NLC from the class number.

   The absence of a Library of Congress call number indicates that the publication has been assigned to the Law Library of the Library of Congress.

2. Dewey Decimal Classification Number (Tag 92)

   This field contains the complete Dewey Decimal Classification Number. Some Dewey Numbers are prefixed by a "j." When such a number appears in the MARC Pilot Project, the "j" follows the Dewey Number separated by two spaces and is enclosed within parentheses. The "j" is used for juvenile titles and the numbers have been assigned from the ninth abridged edition of the Decimal Classification. Those cards in the Annotated Card program may have an "E" for easy book and "Fic" for fiction provided in place of the Dewey Number when appropriate.

3. Main Entry (Tag 10)

   A. The format of the main entry is as specified in the ALA Rules subject to the following exceptions for personal names:

      (1) Titles, e.g. Sir, Lord, etc., follow the forename rather than the surname.

      Example: Scott, Walter, Sir, bart., 1771-1832.

      (2) Date modifiers (b., d., fl., etc.) follow rather than precede the date(s).

      (3) No spaces between initials are left for future additions.

   B. For a title main entry, no Tag 10 data is present in the record. The title statement (Tag 20) is used as the main entry.

   C. A special character, the pound sign (#), is used as a delimiter in:

      (1) Personal Name

      Personal names fall into the following pattern: Name, Title, Date, and Relator. The pound sign is used as follows:

      Name
      Name,#Date#
      Name,#Date#, Relator
      Name,#Title
      Name,#Title, Date#
      Name,#Title, Date#Relator
      Name,#Title, Relator
      Name,#Relator

After a name, the delimiter follows the punctuation. After a date, the delimiter immediately follows the fourth character of the date.

Example: Churchill, Winston Leonard Spencer,#
Sir, 1874#-1965.
Smith, John, 1859#, d.

In the above scheme the word title is used to mean all titles designating rank, office or nobility or words or phrases associated with the name. The word relator means those phrases which describe the relationship between an author and a work, e.g. ed., tr., comp., etc.

(2) All other names and heading used as main entry. A delimiter is inserted following the last character that would normally appear in bold face type on an LC printed card.

Example: U. S.#Library of Congress.
California Institute of Technology,#
Pasadena.

Note: Some of these delimiters are included in the MARC record for purposes of experimenting at the Library of Congress with computer typesetting, sorting, searching, etc.

4. Conventional or Filing Title (Tag 15)

The contents of this field reflect filing procedures currently in use at the Library of Congress.

5. Title Statement (Tag 20)

This field contains the title and all information up to but not including the edition statement. A special character delimiter, the pound sign (#), is used to separate edition information from the remainder of the statement.

6. Imprint Statement (Tag 30)

This field contains the imprint statement and the price of the work if it has been cataloged under the National

Program for Acquisition and Cataloging. A special character delimiter, the pound sign (#), is used to separate place, publisher, date and price. The delimiter follows the punctuation mark after each subfield when such a mark is present. The presence of only two delimiters indicates the absence of a publisher in the imprint statement.

Example: Place,#Publisher,#Date#
Place,#Publisher,#Date#Price
Place,#Date#Price
Place,#Date#

In the above scheme, "Place" includes "n.p." and "Date" includes "n.d." Thus: n.p.,# n.d. #

8. Collation Statement (Tag 40)

This field contains the collation statement.

9. Series Note (Tag 50)*

Each series that is to be traced in exactly the same form as in the series note, is defined by Tag 50. Should the series note consist of an author and a title, a special character delimiter, the dollar sign ($), defines the end of the author element and the beginning of the title element. This allows the author to appear on one line and the title on another for the overprinting of the series added entry. Tag 50 may be repeated as often as necessary.

10. Series Note (Tag 51)*

Each series that is not to be traced in the same form as in the series note or that is not to be traced at all is defined by Tag 51. Tag 51 may be repeated as often as necessary.

---

*The first series note to appear in the record, whether defined by Tag 50 or 51, is the one to be placed in parentheses following the collation statement. Fields tagged 50 or 51 may appear in any sequence, i.e. 50, 51; 51, 50 or any combination for as many series notes as appear in the record.

11. Notes (Tag 60)

This field contains the information for a note. Each note will be found as a separate variable field in the record. Tag 60 may be repeated as often as necessary.

12. Subject Tracing (Tag 70)*

Each subject tracing is located in a variable field defined by Tag 70. Personal names used for subject tracings are formatted in the same manner as for main entries (see page 164); however, no delimiters are used. Tag 70 may be repeated as often as necessary.

13. Personal Author Tracing (Tag 71)*

Each personal author tracing (other than subject) is located in a variable field defined by Tag 71. The format and the use of delimiters for the tracing follow the same rules that apply to personal author main entries (see page 164). Tag 71 may be repeated as often as necessary.

14. Corporate Author Tracing (Tag 72)*

Each corporate author tracing (other than subject) is defined by Tag 72. The third character in the tag field defines the 4 types of corporate authors as follows:

B = Government Body
C = Society or Institution
D = Religious Society or Institution
E = Miscellaneous Corporate Body

There are no pound signs (#) used as delimiters. Tag 72 may be repeated as often as necessary.

15. Uniform Tracing (Tag 73)*

Each uniform tracing is defined by Tag 73. There are no pound signs (#) used as delimiters. Tag 73 may be repeated as often as necessary.

---

*Should any of the tracings be a two-line tracing (such as an author/title tracing), a special character delimiter, a dollar sign ($) defines the end of the first element and beginning of the second for for the overprinting of the added entry.

16. Title Tracing (Tag 74)

Each title tracing is defined by Tag 74. If the title tracing is not the same as the full title or short title in the title statement (Tag 20), it is given in full in this field. If a full title or a short title is to be used from the title statement (Tag 20) this field contains only a "T." There are no pound signs (#) used as delimiters. Tag 74 may be repeated as often as necessary.

17. Series Tracing (Tag 75)

Each series tracing is defined by Tag 75. The first character of the data will be either "A" or "T." "A" indicates a series tracing consisting of an author and a title. "T" indicates a series tracing consisting of a title only. Tag 75 may be repeated as often as necessary.

If the content of the series tracing has not been defined by Tag 50 series note, this field contains either 75A or 75T and the content of the series tracing. Should the content of the series tracing consist of an author/title, a special character delimiter, the dollar sign ($), defines the end of the author element and the beginning of the title element. This allows the author to appear on one line and the title on another for the overprinting of the series added entry.

If the content of the series tracing has been defined by a Tag 50 series note, this field contains either a 75A or a 75T.

18. Copy Statement (Tag 80)

This field contains information relevant to the Library of Congress.

19. National Bibliography Number (Tag 83)

A national bibliography number is the item number of the publication in the national bibliography. The third character of this tag must be either a 1 or a 0 (zero) (blank is invalid). A 0 (zero) indicates that the national bibliography item number can be accommodated by 15 characters or less. A one indicates that the national bibliography item number requires more than 15 characters. This usually occurs when the national bibliography item numbers for a multi-volume work are listed. Variable field 83 contains the item number for the volume number first listed on the input work sheet. The entire series of item numbers for the volumes listed on the input work sheet are given as the first note tagged 60.

20. Library of Congress Catalog Card Number Suffix (Tag 94)

Refer to page 154, fixed field 3.

U. S. GOVERNMENT PRINTING OFFICE : [illegible] O - [illegible]

Supplement One

The MARC II Format

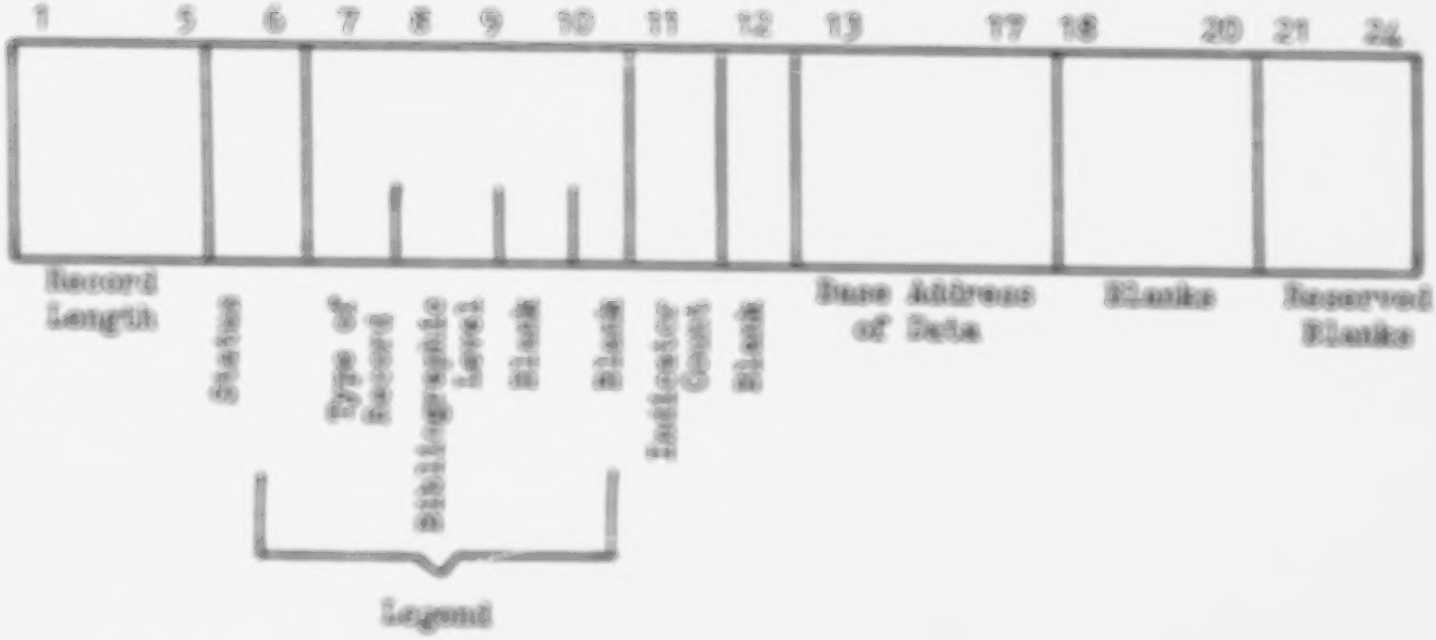
Henriette D. Avram, John F. Knapp, and Lucia J. Rather
Information Systems Office

Since the MARC II Format went to press, the Information Systems Office has continued to meet with other agencies interested in a machine-readable bibliographic format and with librarians who plan to use MARC in their systems. In the interest of international standards, we have also negotiated with representatives of the British National Bibliography who will be using MARC in a pilot project this year.

The changes in the format described in this supplement are based on the suggestions and criticisms which we have received and on agreements reached in our consultations with the British. Some of the changes are designed to make the format more flexible for use with all types of bibliographic materials, while others are intended to simplify the structure of the tagging and the fields.

Library of Congress • Washington • 1968

REVISED MARC II LEADER


1
5
6
7
8
9
10
11
12
13
17
18
20
21
24
Record Length
Status
Type of Record
Bibliographic Level
Blank
Blank
Indicator Count
Blank
Base Address of Data
Blanks
Reserved Blanks
Legend

Element Number	Name of Leader Data Element	Number of Characters	Character Position in Record
1.	Record Length	5	1-5
2.	Record Status	1	6
3.	Legend		
	a. Type of Record	1	7
	b. Bibliographic Level	1	8
	c. Blanks	2	9-10
4.	Indicator Count	1	11
5.	Blank	1	12 [redacted]
6.	Base Address of Data	5	13-17
7.	Blanks	3	18-20
8.	Reserved Blanks (for USASI Z39 Committee Use)	4	21-24

MARC II LEADER

The Leader has been changed to occupy 24 character positions. This change will allow for greater flexibility if it is determined that additional information is needed in the leader area in the future.

Bibliographic Level. This field will be one character in length and will carry a code describing the aspect of the work cataloged. The codes will be as follows:

A - Analytical
M - Monographic
S - Serial
C - Collection

Base Address of Data. For the purpose of determining character positions, a record will be divided into two parts. The first part (the control area) will consist of the Leader and the Directory. Characters in the control area will be numbered sequentially from the first character in the record. The second part will contain the data and will include all the variable fields including the control number. Characters in this area will be numbered sequentially from the first character in the control number field. In order to address a variable field from the first character in the record, it will be necessary to add to its starting character position in the record directory the number of characters in the control portion of the record. For example:

If: Leader and Record Directory = 792 characters
And: Starting Character Position for field 600 in the
Directory is 00185
Then: Field 600 will begin at the 977th character
position in the record.

The number of characters in the control portion of the record will be placed in the legend in the 13th-17th character positions to serve as a base address for the data fields. The number will be right justified with zero fill.

REVISED LIST OF MARC II TAGS

CONTROL FIELDS

001 Control Number
002 Sub-Record Directory
003 Reserved
004 Cataloging Source
008 Fixed Fields
009 Languages

CONTROL NUMBERS

010 LC Card Number
011 Linking LC Card Number
015 National Bibliography Number
016 Linking NBN
020 Standard Book Number
021 Linking SBN
025 Overseas Acquisitions Number (PL480, LACAP, etc.)
026 Linking OAN Number
035 Local System Number
036 Linking Local Number
039 Search Code

KNOWLEDGE NUMBERS

050 LC Call Number
051 Copy Statement
060 NLM Call Number
070 NAL Call Number
071 NAL Subject Category Number
080 UDC Number
081 BNB Classification Number
082 Dewey Decimal Classification No.
090 Local Call Number

MAIN ENTRY

100 Personal Name
110 Corporate Name
111 Conference or Meeting
130 Uniform Title Heading

SUPPLIED TITLES

240 Uniform Title
241 Romanized Title
242 Translated Title
243 Uniform Title (Collective works) (Reserved for British MARC)

TITLE PARAGRAPH

245 Title
250 Edition Statement
260 Imprint

COLLATION

300 Collation
350 Bibliographic Price
360 Converted Price

SERIES NOTES

400 Personal Name-Title (Traced Same)
410 Corporate Name-Title (Traced Same)
411 Conference-Title (Traced Same)
440 Title (Traced Same)
490 Series Untraced or Traced Differently

BIBLIOGRAPHIC NOTES

500 General Notes
501 "Bound with" Note
502 Dissertation Note
503 Bibliographic history Note
504 Bibliography Note
505 Contents Note (Formatted)
506 "Limited use" Note
520 Abstract

SUBJECT ADDED ENTRY

600 Personal Name
610 Corporate Name (excluding political jurisdiction alone)
611 Conference or Meeting
630 Uniform Title Heading

LC Subject Headings

650 Topical
651 Geographic Names
652 Political Jurisdiction Alone or with Subject Subdivisions
653 Proper Names Not Capable of Authorship
654 Headings Modified for Children

Other Subject Headings

660 NLM Subject Headings (MESH)
670 NAL Subject Headings (Agricultural/Biological Vocabulary)
690 Local Subject Heading Systems

OTHER ADDED ENTRIES

700 Personal Name
710 Corporate Name
711 Conference or Meeting
730 Uniform Title Heading
740 Title Traced Differently
753 Proper Name Not Capable of Authorship

SERIES ADDED ENTRIES

800 Personal Name-Title
810 Corporate Name-Title
811 Conference or Meeting-Title
840 Title

900 BLOCK OF 100 NUMBERS FOR LOCAL USE

DELIMITER CODES FOR THE MARC II FORMAT

In concept the MARC II format has been altered to make clear the distinction between the function of tags and delimiters. The tag will identify a field which is made up of a data element or a set of data elements. The delimiter will be combined with a code (a lower case alphabetic letter) and appear along with the data to identify a particular data element in the field. For example, tag 260 will identify the imprint field, and in this field the following delimiter codes may appear to identify the constituent data elements of imprint:

$a - Place
$b - Publisher
$c - Date

Imprint data could appear as follows with hypothetical record directory entries and indicators:

Directory: 260004500208
Data: ƀƀ$aWashington,$bPublic Affairs Press,$c1965.

Directory: 260004900208
Data: ƀƀ$aLondon,$aNew York,$bMacmillan,$c1965$cc1964.

It should be noted that each field starts with two indicators and is immediately followed by a delimiter code for the first data element. This practice introduces a redundancy of identification particularly in fields which have only a single data element, i.e., one can say that the data element is identified by both the field tag and the delimiter code. However, it does keep the concept of the two identifying devices (tags and delimiter codes) in the format consistent throughout, and modules of programming can be developed which process all data elements alike regardless if they happen to be first, second, third, etc. in a field.

The delimiter codes for each field follow below. In order to condense this presentation, this general principle will apply. In a field in which only one data element has yet been defined (e.g., control number), it will be assumed that the field will begin with the delimiter code $a. The same data element may be repeated in a field as many times as necessary by preceding it with a delimiter code, e.g., there may be a need for more than one standard book number to be associated with a single catalog record. The fields listed below can contain more than one kind of defined data element.

0 0 9 Languages

$a - The group of three-character language codes needed to describe the languages of the text or its translation.
$b - Summaries

Example: Directory: 009001800152
Data: ƀ1$aENGFRE$bGERRUS

The work is in English and is a translation from French. It also includes summaries in German and Russian.

Directory: 009001300152
Data: b̸b̸$aENGFRERUS

The work is a multi-lingual work in English, French, and Russian.

0 5 0 – LC, NLM, and NAL Call Numbers
0 6 0
0 7 0 $a - Class Number
$b - Book Number

0 5 1 LC Copy Statement

$a - Class Number
$b - Book Number
$c - Copy Information

1 0 0 – Personal Name
4 0 0
6 0 0 $a - Name
7 0 0 $b - Numeration
8 0 0 $c - Titles and other words associated with the name
$d - Dates
$e - Relator
$k - Form Sub-heading
$t - Title (of book)

1 1 0 – Corporate Name
4 1 0
6 1 0 $a - Name
7 1 0 $b - Each subordinate unit in hierarchy
8 1 0 $k - Form Sub-heading
$t - Title (of book)

1 1 1 – Conference or Meeting
4 1 1
6 1 1 $a - Name
7 1 1 $b - Number
8 1 1 $c - Place
$d - Date
$e - Subordinate unit in Name
$k - Form Sub-heading
$t - Title (of book)

245 Title

$a - Short title from which added entry is generated
$b - Remainder of title
$c - Remainder of title page transcription
$d - (Reserved for British MARC)
$e - (Reserved for British MARC)

250 Edition Statement

$a - Edition
$b - Additional information after edition

260 Imprint

$a - Place
$b - Publisher
$c - Date

300 Collation

$a - Pagination
$b - Illustration Statement
$c - Size
$d - Thickness
$e - Binding (Reserved for British MARC)

440 Series Note

$a - Title
$v - Volume or number
(NOTE: $v is also used to designate volume in fields 400, 410, and 411)

650 Subject Entries
651
652
653
654

$a - Main Heading
$x - General Subdiivisions
$y - Period Subdiivision
$z - Place Subdivision
(NOTE: $x, $y, $z can also be used as subdivisions with fields 600, 610, 611, and 630)

840 Series Traced Differently

$a - Title
$v - Volume or number
(NOTE: $v is also used to designate volume in fields 800, 810, and 811)

NOTE: $t is used in any field in which a title is a sub-heading.

VARIABLE FIELDS CONTENTS TABLE

Tag	Variable Field Data Element
0 0 2	LEGEND EXTENSION (p. 64)
0 0 3	LANGUAGES (p. 64)
	CONTROL NUMBERS
0 1 0	LC CARD NUMBER (p. 65)
0 1 1	NATIONAL BIBLIOGRAPHY NUMBER (p. 66)
0 1 2	STANDARD BOOK NUMBER (p. 66)
0 1 3	PL 480 NUMBER (p. 70)
0 1 4	SEARCH CODE (p. 70)
0 1 9	LOCAL SYSTEM NUMBER (p. 71)
	KNOWLEDGE NUMBERS
0 2 0	NMD CLASSIFICATION NUMBER (p. 71)
0 3 0	DEWEY DECIMAL CLASSIFICATION NUMBER (p. 71)
0 5 0	LC CALL NUMBER (p. 72)
0 5 1	COPY STATEMENT (p. 74)
0 6 0	NLM CALL NUMBER (p. 75)
0 7 0	NAL CALL NUMBER (p. 75)
0 7 1	NAL SUBJECT CATEGORY NUMBER (p. 76)
0 8 0	UDC NUMBER (p. 77)
0 9 0	LOCAL CALL NUMBER (p. 77)
	MAIN ENTRY
1 0 0	PERSONAL NAME (p. 32 & 80)
1 0 8*	TITLE (p. 32)
1 1 0	CORPORATE NAME (p. 34 & 80)
1 1 1	CONFERENCE OR MEETING (p. 34 & 80)
1 1 8*	TITLE (p. 32)
1 2 0	CORPORATE NAME WITH FORM SUBHEADING (p. 36 & 80)
1 2 8*	TITLE (p. 32)
1 3 0	UNIFORM TITLE HEADING (p. 37 & 80)
1 3 8*	TITLE (p. 32)
	SUPPLIED TITLES
2 0 0	UNIFORM TITLE (p. 82)
2 1 0	ROMANIZED TITLE (p. 82)
2 2 0	TRANSLATED TITLE (p. 83)
	TITLE PARAGRAPH
2 4 0	TITLE (p. 83)
2 5 0	EDITION STATEMENT (p. 85)
	IMPRINT
2 6 0	PLACE (p. 86)
2 6 1	PUBLISHER (p. 86)
2 6 2	DATE(s) (P. 86)
3 0 0	COLLATION (p. 89)
3 5 0	BIBLIOGRAPHIC PRICE (p. 89)
3 6 0	CONVERTED PRICE (p. 89)
	SERIES NOTES
4 0 0	PERSONAL NAME (TRACED THE SAME) (p. 32 & 90)
4 0 8	TITLE (p. 32)
4 1 0	CORPORATE NAME (TRACED THE SAME) (p. 34 & 90)
4 1 1	CONFERENCE (TRACED THE SAME) (p. 34 & 90)
4 1 8	TITLE (p. 32)
4 4 0	TITLE (TRACED THE SAME) (p. 92)
4 9 0	SERIES UNTRACED OR TRACED DIFFERENTLY (p. 92)
	BIBLIOGRAPHIC NOTES
5 0 0	BIBLIOGRAPHY NOTE (p. 94)
5 1 0	DISSERTATION NOTE (p. 94)
5 2 0	CONTENTS NOTE (FORMATTED) (p. 94)
5 3 0	"BOUND WITH" NOTE (p. 94)
5 4 0	"LIMITED USE" NOTE (p. 94)
5 5 0	GENERAL NOTES (ALL OTHERS) (p. 94)
5 6 0	ABSTRACT (p. 94)
	SUBJECT ADDED ENTRY
6 0 0	PERSONAL NAME (p. 32 & 95)
6 0 8	TITLE (p. 32 & 95)
6 1 0	CORPORATE NAME (p. 34 & 96)
6 1 1	CONFERENCE OR MEETING (p. 34 & 96)
6 1 8	TITLE (p. 32 & 96)
6 2 0	CORPORATE NAME WITH FORM SUBHEADING (p. 36 & 96)
6 2 8	TITLE (p. 32 & 96)
6 3 0	UNIFORM TITLE HEADING (p. 37 & 96)
6 3 8*	TITLE (p. 32 & 96)
6 5 0	TOPICAL (p. 97)
6 5 1	GEOGRAPHIC NAMES (p. 97)
6 5 2	POLITICAL JURISDICTION ALONE OR WITH SUBJECT SUBDIVISIONS (p. 97)
6 5 3	PROPER NAMES NOT CAPABLE OF AUTHORSHIP (p. 97)
6 5 5	GENERAL SUBDIVISIONS (OTHER THAN PERIOD AND PLACE (p. 98)
6 5 6	PERIOD SUBDIVISION (p. 98)
6 5 7	PLACE SUBDIVISION (p. 98)
6 6 0	NLM SUBJECT HEADINGS (MESH) (p. 98)
6 7 0	NAL AGRICULTURAL/BIOLOGICAL VOCABULARY (p. 99)
6 9 0	LOCAL SUBJECT HEADING SYSTEMS (p. 99)
	OTHER ADDED ENTRIES
7 0 0	PERSONAL NAME (p. 32 & 100)
7 0 8	TITLE (p. 32)
7 1 0	CORPORATE NAME (p. 34 & 100)
7 1 1	CONFERENCE OR MEETING (p. 34 & 100)
7 1 8	TITLE (p. 32)
7 2 0	CORPORATE NAME WITH FORM SUBHEADING (p. 36 & 100)
7 2 8	TITLE (p. 32)
7 3 0	UNIFORM TITLE HEADING (p. 37 & 100)
7 3 8*	TITLE (p. 32)
7 4 0	TITLE TRACED DIFFERENTLY (p. 100)
7 5 3	PROPER NAMES NOT CAPABLE OF AUTHORSHIP (p. 100)
	SERIES ADDED ENTRIES
8 0 0	PERSONAL NAME (p. 32 & 104)
8 0 8	TITLE (p. 32)
8 1 0	CORPORATE NAME (p. 34 & 104)
8 1 1	CONFERENCE OR MEETING (p. 34 & 104)
8 1 8	TITLE (p. 32)
8 4 0	TITLE (p. 105)
9 0 0	BLOCK OF 100 NUMBERS FOR LOCAL USE

*Rare but occasionally found in old cataloging